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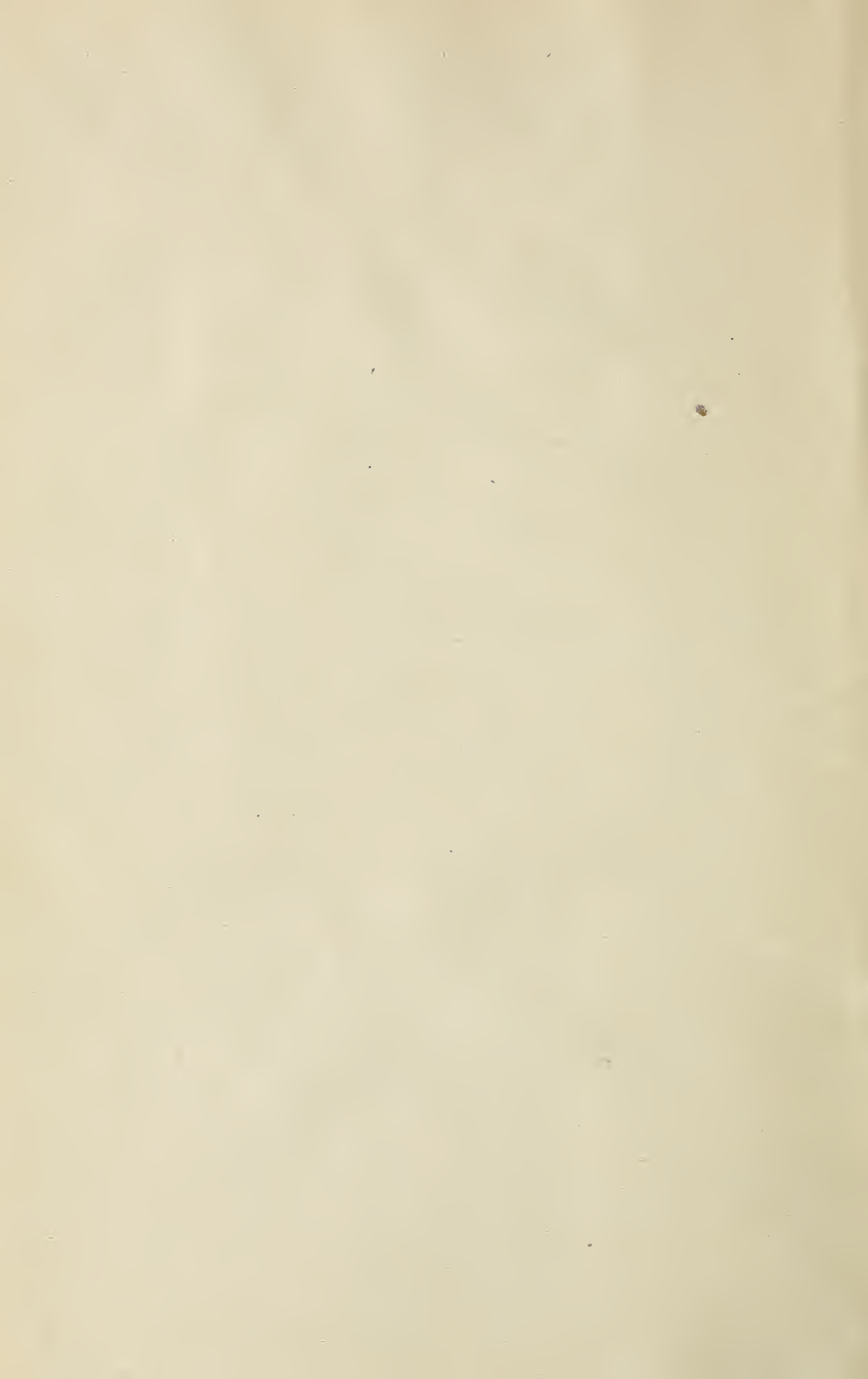


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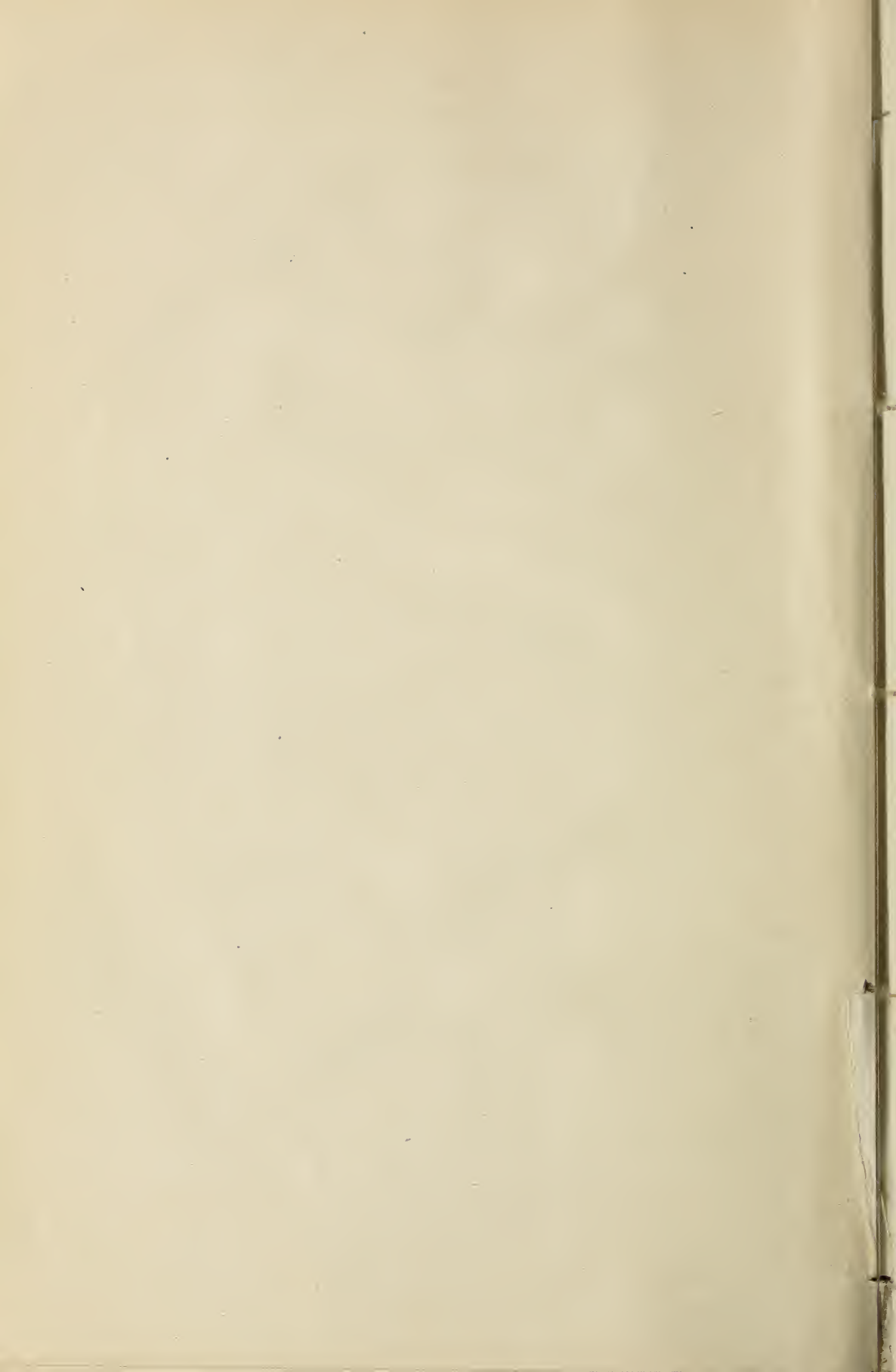
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SUBSCRIPTION RATES.—One year, \$1.00; two years, \$1.50; three years, \$2.00; five years, \$3.00. Canadian subscription, 30 cents additional per year, and foreign subscription, 60 cents additional. **DISCONTINUANCES.**—On and after March 1, 1917, all subscriptions, not paid in advance, or specifically ordered by the subscriber to be continued, will be stopped on expiration. No subscriber will be run into debt by us for this journal. **CHANGE OF ADDRESS.**—Give your old address as well as the new and write the name that appears on the paper. **REMITTANCE.**—Should be sent by postoffice money order, bank draft, express money order or check. **CONTRIBUTIONS** to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **ADVERTISING RATES.**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **ADVERTISERS' RELIABILITY.**—The publishers use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

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SHIPPING-CASES FOR COMB HONEY

Don't make the mistake of putting a fine lot of section honey in poor shipping-cases. It will lower the price to you and damage your future sales. "Falcon" cases are A No. 1, and will be a credit to any crop of honey. Prices are as follows:

Shipping-cases in Flat, without Glass.

No. 1...	holding 24 sections, $4\frac{1}{4} \times 1\frac{3}{8}$, showing 4	10, \$2.00; 100, \$18.00
No. 3...	holding 12 sections, $4\frac{1}{4} \times 1\frac{7}{8}$, showing 3	10, \$2.00; 100, \$18.00
No. 1½...	holding 24 sections, $4\frac{1}{4} \times 1\frac{1}{2}$, showing 4	10, \$1.90; 100, \$17.00
No. 6...	holding 24 sections, $3\frac{3}{8} \times 5 \times 1\frac{1}{2}$, showing 4	10, \$1.90; 100, \$16.00
No. 8...	holding 24 sections, $4 \times 5 \times 1\frac{3}{8}$, showing 4	10, \$1.80; 100, \$16.00

Shipping-cases with Glass.

		with 3-inch glass	with 2-inch glass
No. 11...	Same as No. 1...Nailed, 35c; in flat, 1, 25c;	10, \$2.30; 100, \$21.00	100, \$20.00
No. 13...	Same as No. 3...Nailed, 22; in flat, 1, 15c;	10, \$1.40; 100, \$12.50	100, \$12.00
No. 11½...	Same as No. 1½...Nailed, 35c; in flat, 1, 25c;	10, \$2.20; 100, \$20.00	100, \$19.00
No. 16...	Same as No. 6...Nailed, 30c; in flat, 1, 22c;	10, \$2.10; 100, \$19.00	
No. 18...	Same as No. 8...Nailed, 30c; in flat, 1, 22c;	10, \$2.10; 100, \$19.00	

Red Catalog, postpaid

Dealers Everywhere

"Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from.

You Don't Wait for Money When You Ship Muth Your Honey

We Remit the Day Shipments Arrive

We are in the market to buy FANCY AND NUMBER ONE WHITE COMB HONEY, in no-drip glass-front cases. Tell us what you have to offer and name your price delivered here.

Will also buy—

White Clover extracted and Amber extracted.

A few cars of California Water White Sage.

A few cars of California Orange Blossom.

When offering extracted honey mail us a sample and give your lowest price delivered here. We buy every time you name a good price.

We do beeswax rendering; ship us your old combs and cappings.. Write us for terms.

THE FRED W. MUTH CO.

"The Busy Bee Men"

204 Walnut Street

Cincinnati, Ohio

Increase Your Honey Crop

by introducing some of Leininger's strain of Italian Queens which have a record of 30 years as to honey-gathering qualities and gentleness are unexcelled. Disease has never appeared in our apiaries. Queens will be ready June the first. Untested, each, \$1; 6, \$5. Tested, each, \$1.25; 6, \$5.50. Breeders, \$5.

FRED LEININGER & SON, Delphos, Ohio

Supplies Cheap During the Winter Months

Send me a list of your wants and let me figure on it for you.

Italian Bees, Queens, and Nuclei for season of 1917.

E. A. Leffingwell, Allen, Mich.

HONEY MARKETS

BASIS OF PRICE QUOTATIONS.

The prices listed below, unless otherwise stated, are those at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

PITTSBURG.—On account of holiday business, when trade was confined to practically holiday necessities, the market on honey has been very quiet here with no change in prices. W. E. Osborn Co.
Pittsburg, Pa., Dec. 26.

DETROIT.—Comb honey is quiet for the last ten days. We look for a better demand after the holidays. It is selling at 15 to 16; extracted is in better demand at 8½ to 9. F. P. Reynolds Co.
Detroit, Mich., Dec. 22.

CLEVELAND.—The demand for comb honey is light; and altho the supply in market is limited, there is no advance in prices. We quote fancy comb honey, per case, \$3.65 to \$3.85; No. 1, \$3.50 to \$3.60; No. 2, \$3.00 to \$3.25.
Cleveland, O., Dec. 26. C. Chandler's Sons.

BOSTON.—Honey is somewhat neglected on account of Christmas holiday. We look for a good sale from now on. We quote extra fancy comb honey, per case, \$3.50; fancy, \$3.25; No. 1, \$3.00; No. 2, \$2.25. White extracted honey brings 8 to 11.
Boston, Mass., Dec. 26. Blake-Lee Co.

SYRACUSE.—There is no particular change in market conditions here since last report. There is a goodly offering of comb honey moving moderately. Fancy comb honey brings \$3.60; No. 1, \$3.36. Light amber extracted, in cans, brings 9. E. B. Ross.
Syracuse, N. Y., Dec. 26.

FLORIDA.—The supply of all grades is very limited, and the demand is strong. White extracted honey brings 8 1/3; light amber, in barrels, 5; amber, in barrels, 3½. Clean average yellow beeswax brings 30. S. S. Alderman.
Wewahitchka, Fla., Dec. 21.

HAMILTON.—Demand is quiet, owing to Christmas trade. We quote extra fancy comb honey, per case, \$2.50; No. 1, \$2.25; No. 2, \$1.65. White extracted honey brings 12 in 60-lb. tins; light amber, in cans, 10. F. W. Fearman & Co.,
Hamilton, Ont., Dec. 26. MacNab Street Branch.

MONTREAL.—Stocks are reported short; good local demand. We quote extra fancy comb honey, per case, 17; fancy, 16; No. 1, 15; No. 2, 13. White extracted honey brings 12 to 12½; light amber, in cans, 11 to 11½; in barrels, 10¾; amber, in cans, 10½ to 11; in barrels, 10. Gunn, Langlois & Co., Ltd.
Montreal, Can., Dec. 23.

ALBANY.—Comb honey is slow selling; none since the extreme cold weather, and will be dull throughout winter. Our stock is not large. We quote fancy comb honey, 14 to 15; No. 1, 12 to 13; No. 2, 11 to 12. White extracted honey brings 8 to 8½; light amber, in cans, 7 to 7½. Clean average yellow beeswax brings 30 to 32. H. R. Wright.
Albany, N. Y., Dec. 26.

TEXAS.—Good demand for honey but little offered. We quote No. 1 bulk comb honey, 10½ to 11 in 60-lb. cans; No. 2, 9½ to 10; ½ cent advance for smaller sizes. Light amber extracted honey, in cans, 8½ to 9; in barrels, 7½ to 8; amber, in cans, 7½ to 8; in barrels, 6½ to 7. Clean average yellow beeswax brings 27 to 28. J. A. Simmons.
Sabinal, Tex., Dec. 27.

BUFFALO.—Receipts of honey are increasing, with very light demand, and practically no trading. The usual dullness during holiday season is on, and we may expect a light demand for the next month. We quote extra fancy comb honey, per case, at 15; fancy, 14½; No. 1, 14; No. 2, 12 to 13. White extracted honey brings 8 to 8½; light amber, in cans, 7½; amber, in cans, 6½ to 7.
Buffalo, N. Y., Dec. 26. Gleason & Lansing.

KANSAS CITY.—The demand for comb honey is still slow and draggy. We do not look for much change until after February 1, or until we get some real cold weather. Extracted honey is very firm. No. 1 comb honey brings \$2.75; No. 2, \$2.50; light-amber extracted, in cans, brings 8½; amber, in cans, 7½ to 8. Clean average yellow beeswax brings 25. C. C. Clemons Produce Co.
Kansas City, Mo., Dec. 26.

PORTLAND.—No great demand for comb honey at present. The local crop all in, so far as we know. The extracted demand is rather sluggish, altho prices are firm. We quote extra fancy comb honey, per case, \$3.50; fancy, \$3.25; No. 1, \$3.00; No. 2, \$2.90. White extracted honey, per lb., 8½; light amber, in cans, 8; amber, in cans, 7½. Clean average yellow beeswax brings 25 to 26.
Portland, Ore., Dec. 19. Pacific Honey Co.

LOS ANGELES.—These prices are what the retailer pays our wholesale customers, not what we are buying at. No supply of extracted, except for local use. Surplus of comb with little demand. Local prices unchanged, with little honey being used. We quote extra fancy comb honey, per case, \$4.25; fancy, \$3.85; No. 1, \$3.25; No. 2, \$2.50. White extracted honey brings 8½; light amber, in cans, 8; amber, in cans, 7. Clean average yellow beeswax brings 35.
Los Angeles, Cal., Dec. 21. Geo. L. Emerson.

NEW YORK.—The demand for comb honey has fallen off considerably of late, as is generally the case at this time of the year; and, while there is no stock, receipts are sufficient to meet the demand. We quote fancy white at 15; No. 1, 14; lower grades, 12 to 13; dark and mixed, 10 to 11. Extracted honey is in good demand. White clover seems to be pretty well cleaned up, while other grades are in good supply. Prices seem to run rather irregular. We quote white from 8 to 9; light amber, 7 to 8; dark, 6 to 7. Beeswax brings 30 to 32.
New York, Dec. 26. Hildreth & Segelken.

ST. LOUIS.—Our honey market is unchanged since our last quotation. Comb honey is still moving very slowly, but there is a better demand for extracted honey. This market is well supplied with comb honey, but is running rather short on Southern extracted of good flavor. We quote extra fancy comb honey, per case, \$3.75; fancy, \$3.50; No. 1, \$3.00 to \$3.25; No. 2, \$2.50 to \$2.75. Light amber extracted honey, in cans, brings 9 to 10; amber, dark, in cans, 7½ to 8. Clean average yellow beeswax brings 32.
R. Hartmann Produce Co.

St. Louis, Mo., Dec. 22.

CHICAGO.—Comb honey continues to drag; 100 lbs. of extracted to 10 lbs. of comb is about the average in sales during the past month. So active is the demand in extracted that the price has advanced on all grades 1 ct. or about per pound. The best grades of white clover are now commanding 10 cts., and it looks as tho all of it were going to go into consumption before the coming of another crop. Various reasons have been assigned for the unusual consumption of extracted versus comb. One we frequently hear is that it is taking the place of butter and preserves, as children are now getting honey on their bread instead of jam. Beeswax sells at from 28 to 30 for the ordinary grades; and if free from sediment, and bright in color, 32.
Chicago, Ill., Dec. 18. R. A. Burnett & Co.

SAN FRANCISCO.—All grades of extracted honey have been in good request, and the demand continues, and especially is extra light amber wanted. Doubtless much of the local buying has been caused

by dealers in the bottling trade investing in quantities for late winter and spring use. Manufacturers and preserving companies who put up honey in containers generally report business brisk—local, shipping, and foreign. We quote extra fancy comb honey, per case, \$3.00; fancy, \$2.75 to \$2.85; No. 1, \$2.25 to \$2.50; No. 2, nominal. White extracted honey brings 8 to 8½; very little offering; light amber, in cans, 7 to 7½; amber, in cans, 6 to 6½. Clean average yellow beeswax brings 26 to 29.

Leutzing & Lane.

San Francisco, Cal., Dec. 20.

3 Garden Tools in 1

The **BARKER** Weeder, Mulcher and Cultivator

The only garden tool that successfully, in one operation, kills weeds, and forms a complete soil mulch to hold moisture. "Best Weed Killer Ever Used." A boy with a Barker beats ten men with hoes. Has shovels for deeper cultivation. Self-adjusting. Costs little. Write for illustrated folder and special Factory-to-User offer.



Barker Mfg. Co.
Box 117 David City, Nebr.

LOS ANGELES HONEY CO.

633 Central Bldg. . . . Los Angeles, Cal

Buyers and Sellers
of Honey and Wax

Write us for Prices when in the Market

Talking Queens

Laws Queens Speak
for Themselves . . .

Beginning about March 1st I will mail Italian Queens at the following prices: Single tested queen, \$1.25; select tested, \$2.00; fine breeding queens, \$5.00. No discount from these prices even in quantity lots, before April 15th. Later "ads" will contain revised prices for the season. Bees by the pound.

After May 1st, prices on application. A discount of 5 per cent on all orders for queens or bees by the pound during January when cash accompanies the order.

Yours for a busy season

W. H. Laws, Beeville, Tex.

Beekkeepers' Supplies

Now is the time to order your supplies for next season, and have everything in readiness for next Spring. Take advantage of the early-order cash discount, and send us a list of the supplies wanted, and we will be pleased to quote you. We will mail you our catalog upon request; in short, we handle everything a beekeeper requires for the proper conduct of an apiary; Root's goods at factory prices.

C. H. W. Weber & Company, Cincinnati, O.

2146 Central Avenue

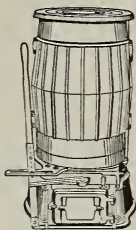
VICTOR and HOME VICTOR

Multiple System
Water Heaters for
House Heating

Heats bath and kitchen boiler too.
ONE STOVE AND ONE FIRE
YEAR ROUND. There is nothing
like it. Send for booklet.

S. V. Reeves, Mfr.

Haddonfield, N. J.

**FRUIT GROWING and
BEEKEEPING**

are two closely allied occupations. Beekeepers should read "**THE SOUTHERN FRUIT GROWER**" which treats on all the phases of successful fruit growing, also gardening, etc. Established for more than 20 years. Edited by Robert Sparks Walker. 50c per year; 3 years for \$1, or sample copy sent free to those who are interested. Address

THE SOUTHERN FRUIT GROWER
Chattanooga, Tenn.

Established 1885



It will pay you to get our 64-page
catalog and early-order discount

**Beekeepers'
Supplies**

The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

PENNSYLVANIA BEEKEEPERS

Our catalogs now out. Postal
will bring you one. Root's goods
at Root's prices. Prompt shipment.

E. M. Dunkel, Osceola Mills, Pa.

CANDY

Bees sometimes starve with plenty of honey in the hive. Why not avoid this risk by placing a plate or two of candy on the frames when you pack for winter? It is a good life insurance. Send for circular also catalog of supplies.

H. H. Jepson, 182 Friend St., Boston, Mass.

BANKING BY MAIL

AT 4%

FOR YOU

You are following a very
unwise plan if you in-
vest your surplus funds
where there is the slight-
est danger of loss, or if
you keep them at home.

No matter where you live you
can — by our **BANKING BY
MAIL** plan deposit your funds
in this strong bank, which af-
fords absolute safety for every
dollar, and pays 4 per cent in-
terest on small as well as large
deposits.

Deposits may be sent in the
form of check, draft, money or-
der, or the currency by register-
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Start your account **TODAY.**

**THE SAVINGS
DEPOSIT BANK CO.**
MEDINA, OHIO

A.T. SPITZER, Pres.
E.R. ROOT, Vice-Pres.
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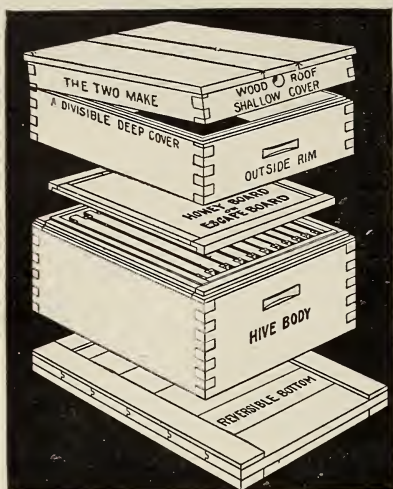
ASSETS OVER ONE MILLION DOLLARS

BEESWAX WANTED

for manufacture into
"**SUPERIOR FOUNDATION**"
on shares (Weed process)

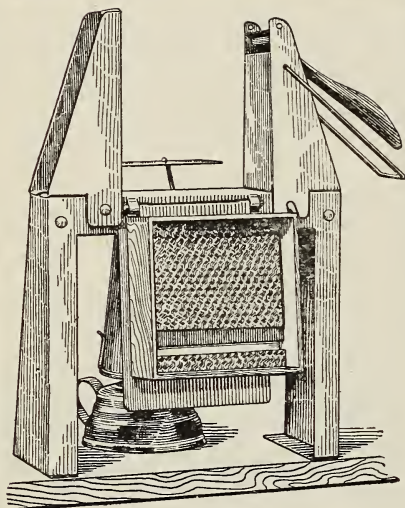
Our terms assure cheaper foundation
SUPERIOR HONEY CO., Ogden, Utah
Wanted: Extracted honey





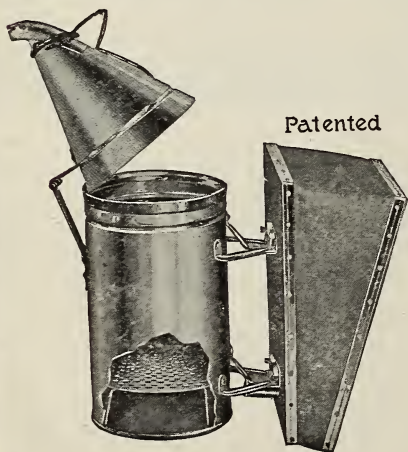
Protection Hives

Price \$13.75 for 5 hives, f. o. b. Grand Rapids, Mich. Delivered prices furnished on request. Double wall with air spaces, insulation, or packing as you may prefer. Over an inch of space between the outer and inner walls. Total wall space two and a quarter inches. If you have ever had occasion to spend any time in a building single-boarded, during cold weather, you can appreciate the advantages of double walls. Even with a redhot stove you are freezing on one side and roasting on the other. Double walls relieve this condition and reduce the quantity of fuel necessary. Honey is the fuel, the bee the stove. The life of the bee as well as the stove depends on its work; do not burn them out. Send for catalog and special circulars. We are the beehive people. Send us a list of your requirements for 1917 and let us figure with you. Small as well as large orders are wanted. Let us add you to our list of many pleased customers in all parts of the country.



Section-fixer

A combined section-press and foundation-fastener of pressed-steel construction. It folds the section and puts in top and bottom starters all at one handling, thus saving a great amount of labor. With top and bottom starters the comb is firmly attached to all four sides — a requirement to grade fancy. Increase the value of your crop by this method. H. W. Schultz, of Middleton, Mich., in writing us says: "Your section-fixer is the best yet; can put up 150 sections per hour with top and bottom starters." Price with lamp, \$2.75. Shipping weight 5 lbs. Postage extra. Send for special circular fully describing this machine.



Patented

Bingham Bee-smoker

has been on the market nearly forty years, and is the standard in this and many foreign countries. It is the all-important tool of the most extensive honey-producers of the world. For sale direct or by all dealers in beekeepers' supplies.

Smoke Engine, 4-inch stove.....	\$1.25
Doctor, 3½-inch stove.....	.85
Two above sizes in copper, 50 cts. extra	
Conquerer, 3-inch stove.....	.75
Little Wonder, 2½-inch stove.....	.50
Hinged cover on two larger sizes.	
Postage extra.	

A. G. Woodman Co.
Grand Rapids, Mich.

Order Your 1917 Supplies from Syracuse

We Carry the Largest Line in New York State

And are fully prepared to fill your order at once, as we have just received five more carloads of fresh supplies from the factory. Many last year got left on their five-gallon cans, as we were sold out early. This year we have almost twice as many in stock; but to be sure of them you better place your order now. They keep.

Hives and supplies purchased now can be put together in a good workmanlike way, and painted during the idle winter days, and they will be ready when the bees swarm in the spring.

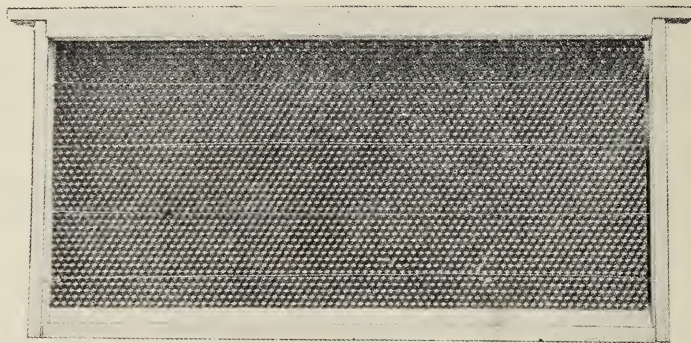
We have 10 old-style Chaff Hives, eight-frame, and one gross of one-pint premium jars that we should like to dispose of. Send for price.

Send for our 1917 catalog with new prices.

F. A. Salisbury, Syracuse, New York
1631 West Genesee St.

Full Sheets of Dadant's Foundation

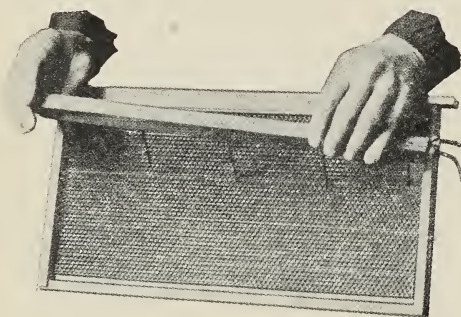
in all your Brood-frames and Sections



- 1—Mean nice straight combs for you to handle.
- 2—Save the bees time, work and honey.
- 3—Prevent a useless aggregation of drones which do not produce but consume a large quantity of honey.
- 4—Mean a maximum force of worker bees to gather the crop.

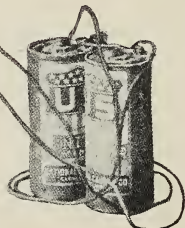
Besides, Dadant's Foundation is always sure to be accepted by the bees as promptly as it is given to them. Tests by practical beekeepers have shown that they accept "Dadant's" first.

All these points insure a maximum crop of honey stored in the best shape for either home use or for market.



New Electric Wire-imbedder

Patent
Applied
for



Price
Postpaid
without
Batteries,
\$1.00

The newest and best wire imbedder on the market. Does the work quickly and so thoroly that the wires seem to have "grown" in the sheets.

It is a "dandy" and you should have one. OUR CATALOG—lists practically everything given in other catalogs and a few new articles besides. Send for one today.

Dadant & Son . . Hamilton, Illinois

GLEANINGS IN BEE CULTURE

JANUARY, 1917



EDITORIAL

FOR ALL OF US it is the New Year's season. We have hung up the new calendar



*THE DAWN
OF A
NEW DAY*

for 1917 and before us lies a clean new slate on which to write the record

of another year. But, for the beekeeping world there is good warrant for believing that something more than a new year is just ahead—there is dawning a new day of a long and better era in the beekeepers' world. Our East is already brightly streaked with its certain promise. If we were to characterize this new day we would call it the Day of Betters—better bees, better equipment, better beekeeping, better beekeepers, better training, better knowledge, better markets, better prices, better appreciation of our profession and of the importance of honey—better everything along the whole line reaching from the larva in the brood-combs to the honey service of a palace Pullman.

Let us subpoena the facts to prove the case—to give substance to the prophecy of the new and better day that we declare to be already breaking above the beemen's eastern horizon. These prophetic facts are all abundant enough—it is only hard to array them in their sequence and importance.

As a first instance, let us turn back a dozen years and inquire concerning the status of the beekeepers' profession even so short a time ago. At that time how many agricultural schools had given any recognition to apiculture? Not one. What had the national government in its Department of Agriculture done for the beekeeper and his calling? Very little.

To day we may safely say that never in the history of beekeeping has there been so great an opportunity for education. Congress, in appropriating \$5000 in extension work in apiculture, has established, in three different states, government experts whose business it is to help, teach, and encourage. Agricultural colleges in

ten states are offering courses in beekeeping. Valuable and instructive government and state bulletins are available in increasing numbers. There are more and better books on the subject; and while there are fewer apicultural journals they are of a higher class.

New states are passing inspection laws; and other states having laws inadequate are rapidly repealing them and passing better ones. More efficient inspectors are being appointed, and the whole work of inspection is being put on a firmer foundation. At the same time the various brood diseases are making beekeeping an intolerable nuisance for the careless, slipshod beekeeper, so that the conditions for the progressive man in the industry are far safer.

Improved methods have made honey production easier, and at the same time the demand for honey has increased all out of proportion to the increased production. It may be bought in any grocery. Thousands of families who never thought of using honey are now substituting it for so much sugar, finding it more healthful while no more expensive in the end. So great is the demand, in fact, that the extracted-honey market this year, in the majority of localities, was almost bare by the holidays.

Beekeeping has truly become a man's business that commands the respect of every one. Truly the new day has dawned—a brighter day—a day full of possibilities and of opportunities for success.



AT FIRST THOUGHT, one might suppose that selling honey from the doorstep of the



beekeeper (as exemplified in *FOR ALL HONEY-SELLERS* "The Roadside Market" in this

issue) can be of interest only to small producers, and that those who number their colonies by the hundreds can not dispose of any appreciable amount of honey in this

way. As a matter of fact, however, every large producer has a certain amount of dark honey not quite up to grade. In cases of comb honey there are always some sections in which the combs are not firmly attached all around to the wood; others wherein the combs are slightly cracked; still others which are too light to ship or to dispose of in regular channels. It is far better to sell such honey locally than to ship it away. In most instances the honey itself is exactly as good, but can not grade up and be shipped to advantage. Owing to this fact, no producer, large or small, of comb honey or of extracted, can afford to disregard the opportunity for selling honey directly from the house, advertising it by means of an inexpensive sign on a tree or post by the roadside.



CONTRARY TO WHAT we had reason to hope, *comb* honey has not gone up in price.



HONEY MARKET AND PRICES

In fact, we are surprised at the number of offers and prices that are being made.

It is becoming more and more apparent that there must have been a large overproduction of *comb* honey, in spite of our urgent and repeated appeal to beekeepers last spring to run more to extracted.

On the other hand, *liquid* honey, both for the table and for manufacturing purposes, continues firm. The large buyers are hunting for it in carlots. Exporters at New York are now trying to buy back the cheaper grades of extracted, because, as they say, they cannot find any anywhere of any quantity. Two of the large bottlers appear to be fairly well supplied. Two more are short. It is reasonably certain that extracted will remain firm; but whether the price will go still higher, however, is at present a little doubtful. The most we can hope for is that they will continue till next spring.

In the mean time the market on *comb* honey is easy, or, rather, it has a tendency to sag.

It is becoming more and more apparent that the conditions of last year were particularly favorable for the production of *comb* honey. As a result, a larger supply of it was produced than was ever known before in the history of the business.

The dealers and some of the large buyers are becoming disgusted with the *comb*-honey business. There are two reasons for this. One is the careless packing on the part of the producer and the miserable

shipping-cases often used, both of which result in breakdowns and dripping honey. Of all things, broken *comb* honey is worse than a white elephant on the hands of the dealer. He does not know what to do with the mess, and he vows he will not buy *comb* honey again. The second reason is that *comb* honey granulates. The average dealer does not know how to take care of it, even if he does receive it in good shape. He leaves it in a room of variable temperature, with the result that half of it is granulated before New Year's day. Finally he attempts to sell it, but it comes back on his hands because it has "turned to sugar." Then in desperation he puts the product out on the sidewalk, marks it down to ten cents per box, retail, when perhaps he paid thirteen or fourteen.

Careful packing, using roomy shipping-cases with corrugated paper, and a letter of instructions to the dealer, will save a lot of this trouble. When *comb* honey is shipped in less than carlots it should always be put in carriers. The new Western classification will probably bar out all other *comb* honey.



THERE ARE THREE factors responsible for high prices—the heavy and continuous advertising of



WHY THE Airline Honey DEMAND FOR by The A. I. EXTRACTED? Root Company; the general

upward trend of all food products, and the enormous quantities of the cheaper extracted honeys shipped to the nations now at war to take the place of sugar that is higher in price. There is one other factor, and that is, honey is coming to be recognized as a food, not as a luxury—a necessary food that helps to make up a balanced ration. The nations at war have discovered that their soldier boys must have something that will make energy, life, and strength; and there is nothing that will do it better than honey. Beefsteak — in fact, none of the proteins—will supply energy. Honey supplies this demand in its purest and most easily assimilable form.

The careful and discriminating housewife is already discovering the same fact. When extracted is cheaper than *comb* honey, pound for pound, she will take it in preference to the more expensive article which she buys in very small quantities for the table when she has company.

The numerous articles that have been published in our largest magazines on honey

as a food during the past three or four years, and the continuous advertising of the Root Co., are putting extracted honey on the table as a food for every-day use.



SOME BEEKEEPERS in the South have done a nice business in shipping bees in combless packages to the North. Others



POUND-
PACKAGE
ADVERTISING

have not been so successful, mainly because they have set their prices too low to cover cost of cage, advertising, and replacements. Numerous complaints have been received regarding the advertiser who fails to make satisfactory replacements of combless bees that have died *en route*. Some shippers contend that their prices are so low that the beekeeper ought not to expect a replacement. If the purchaser had known that the guarantee did not cover replacement he would have ordered of the other fellow. This failure to replace has caused no end of dissatisfaction, with the result that these shippers will not get very much of the trade of the coming year.

In view of the complaints that we have received, GLEANINGS has decided it will accept no advertisement from any pound-package man unless he will furnish satisfactory references, guaranteeing pure stock and safe arrival. This means that, in the event the bees are not pure or fail to come thru in good order, the shipper will make another shipment or return enough money to cover the shortage, whatever that may be. In some cases where the shortage is small he can make it up by sending a queen by mail.

On the other hand GLEANINGS believes that it is only fair for the consignee to pay express charges on the second lot of bees received; and he should also furnish a statement from the express agent certifying the condition of each shipment of bees on arrival.

A copy of this editorial will be sent to each person who seeks to advertise combless bees in these columns, and he will be asked to agree to the above conditions. Failing to comply, his advertisement will be rejected.

As a general thing the beekeeper who will furnish bees at cutrate prices, or those considerably below the average of his competitors, will be less inclined to make a satisfactory replacement. While we do not wish to dictate prices we do feel that the pound-package man should charge a price

sufficient to enable him to take care of replacements. That is to say, he ought, in addition to the cost of the package and cost of bees, add at least 25 per cent to cover replacement. While the majority of shipments will go thru in good order there will be a few where the loss will be complete, and others where the loss will be only partial. During extremely hot weather shipper should allow for at least 50 per cent replacement in order to be on the safe side.

It may be expected that as a rule it will be safe to buy of the man who furnished good bees the past season. The buyer however should be careful about giving a large order to an entirely new man, especially if he offers extremely low prices. The old rule, that "the cheapest may be the dearest," applies exactly to the pound-package business.



THE READER will notice some marked changes in this GLEANINGS. Besides the



THE NEW
MONTHLY
GLEANINGS

fact that the journal is now a monthly, its general make-up, style, and ap-

pearance are those of a magazine. The cover, as will be noted, is printed in colors. The artistic improvement in its entire typographical make-up will be apparent to every reader.

In arrangement of reading matter, editorials lead off as heretofore; but all news items that have formerly gone into this department will go under a separate head, "Just News," in the back part of the journal. Editorials will be followed by feature and special articles of some length. Next follows "From the Field of Experience." This will consist of short articles along the line of what has appeared in our columns in the past under the head of "General Correspondence." The regular departments, with several additions to their former number, follow.

The children and some old folks will doubtless be interested in "Mother Goose," by M. G. P. In the present issue it will not be difficult to see the resemblance between "Honeycomb Section" and the Humpty-Dumpty of old.

We wish to call the particular attention of our readers to the "Letters from a Beekeeper's Wife," that will run thru the entire year. They relate actual experiences; and as they are written in story form they will interest the old as well as the young—particularly that class of readers who had

their ups and downs as beginners. Some domestic touches are given all thru in such a way as to give life and substance to the serial.

The departments of "Our Homes," "Health Notes," and "Temperance," by A. I. Root, appear as formerly.

The discriminating reader will not fail to notice the quality of the material of the new GLEANINGS. We feel that we have hardly got into full action yet as a monthly; but when we do we hope to give our readers some pleasant surprises.

Owing to the fact that the present monthly is larger than the former GLEANINGS, and that we had only two weeks instead of a month to get out this issue, we are a little late. We hope the quality of the product will more than make up for the slight delay.



THE CONVENTION of the National Beekeepers' Association for 1917 will be held



MEETING
OF THE
NATIONAL

at Madison,
Wis., Feb. 6, 7
and 8. Both
President Jager
and Secretary

Millen have ambitious plans for a new National. They are hard at work on a program, and we may rest assured that no stone will be left unturned to make this meeting a big success. President Jager and his secretary are live wires, and we confidently expect this to be one of the best conventions of the season. See Convention Notes for general program and speakers.

Madison is located in a territory where there are large numbers of first-class beekeepers. Besides a large local attendance there will doubtless be representatives from other states. GLEANINGS urges every one of its readers who can to be present at this meeting.

Let as many of us as possible be boosters by attending the next National meeting. The editor of GLEANINGS will take his own advice in this case—to help boost—by being present on the 6th and 7th.



AT THE IOWA convention Mr. Frank Coverdale, of Delmar, Ia., made the statement that 300



BEEKEEP-
ING AS AN
AVOCATION

colonies of bees
would bring in
as large a revenue
as a 160-

acre farm, with a great deal less work, and on a very much smaller investment. He

went on to add that nothing gave him more real pleasure than working with his bees.

At the same convention Supt. A. T. Hukill of the Waterloo schools gave expression to a similar sentiment by saying, "No investment will yield so large a return as a colony of bees. * * * I know of no occupation that brings one so close to nature. It makes a better man."

It will be remembered that Mr. Coverdale is the man who put sweet clover on the map of the United States—that is, he demonstrated that it is a commercial success for a farm alone, to say nothing about bees. He grows about 800 acres of sweet clover himself. He is one of the best stock-raisers and beekeepers in all Iowa if not in the United States. Sweet clover works well with bees, and makes it possible for him to get the very highest price in the market for his honey and his stock. Coverdale is successful in everything he undertakes.



THE VETERAN BEEKEEPER, Mr. J. W. Bittenbender, of Knoxville, Tenn., at



THE NET-
WEIGHT LAW
QUESTION

the Iowa convention spoke
on the demoralized condition of
the comb-honey

market. He deplored the fact that there was no uniform method of grading, and no uniform prices; that comb honey was quoted all the way from \$2.25 to \$3.50 a case. The practical operation of the net-weight law, he thought, had done more harm than good, and that the law ought to be revised. His remedy would be a new net-weight law and a uniform system of grading that every one would adopt.

When it comes to national legislation we can wish and wish; we can pass resolutions; but it is a difficult thing to get congress, one of the most unwieldy bodies in the world, to do something really useful. While Mr. Bittenbender has our sympathy, the net-weight law is not so bad as it might be. It has stopped the practice of mixing different weights of sections in the cases. It tends to a more uniform product on the market. While it is lived up to by some, those interested in its enforcement should report all cases of law violations.



THE REPORTS of the chain of conventions held in December are given on page 56 under the head of "Just News."

IS roadside honey-selling — selling from the front doorstep of the beekeeper's home, if you please — profitable, practicable, and worthy the careful business attention of every honey-producer who may live in a populous part of the country?

That is the question that this article purposes to discuss and exemplify.

NEW MARKETING POSSIBILITIES

A moment's reflection reveals the fact that good roads and the ever increasing number of automobiles have made possible new methods for the marketing of a not inconsiderable part of almost every kind of farm produce. One of these new methods might be properly included in the term "roadside marketing." Along the main roads of many parts of the country, especially in the vicinity of large towns and cities, it is now common, in the summer time, to see fruit and vegetables displayed for sale, since many automobilists are glad to pay good prices for all kinds of fresh produce. Instead of the producer having to solve the problem of getting his product to the consumer, the consumer is coming after it and paying all the transportation charges himself.

That the amount of produce disposed of in this way is of considerable consequence (notably in the eastern states) is a fact known to every automobile driver in the vicinity of many of the large towns of New England and New York, and the practice of "roadside marketing" is steadily taking its way westward. This is because producers are beginning to realize that the road-traveling public is willing to buy (and buy in quantities) fresh fruit, vegetables, butter and eggs—and honey—and these things at a price practically the same as that charged by retailers in the cities.

A LOT OF HONEY-FOR-SALE SIGNS

To come to the case in hand, it may be said that the honey-producers are fast

ROADSIDE MARKETING

*Concrete Examples of How Honey
Can be Sold Profitably from the
Doorstep of the Beekeeper*

By the Editor

coming to adopt this new marketing idea. As an evidence of this fact, on one main road leading south from Cleveland the writer counted on a

single trip between Medina and Cleveland (25 miles), one day late last summer, nearly a dozen signs reading "Honey for Sale," "New Comb Honey for Sale," etc. Curiosity as to the results secured from this "shingle" advertising and roadside merchandising led us several weeks later to take this same automobile trip between our home and the city of Cleveland, with the intention of inquiring at each house where a "honey-for-sale" sign was displayed as to results and sales made. Altho only about a month had elapsed between the time when we first noted the abundance of "honey-for-sale" signs on this highway and the time when we went on our automobile trip over the same ground to secure information as to results, yet we were surprised and disappointed (for editorial reasons only) to find all but three or four of the signs removed, presumably because of the fact that the honey had all been sold.

Now let the testimony of these roadside honey-sellers be considered. It is fact and experience which is better than theory or argument.

A FIRST-SEASON SUCCESS

The first beekeeper's home visited by us, and where a roadside sign announced honey for sale, was that of Arlie Pritchard, son of The A. I. Root Co.'s well-known queen-rearer, Mel T. Pritchard, living two miles north of Medina on an improved road leading directly to Cleveland, partly macadam and partly brick pavement. A picture of the premises is printed at the foot of this page. The neatness and good order of this home are made apparent by a glance at the surroundings. An apiary, with the grass cleanly cut and the hives neatly painted, standing prominently on a knoll a hundred yards from the street and a little north of



the home, formed a prominent and very pleasing part of the landscape as observable by the passerby.

Fastened and braced to a telephone-post directly in front of Mr. Pritchard's house was the roadside sign announcing the sale of honey, which read as follows: "Honey for Sale—Sound Sparton." The words "Honey for Sale" were drawn in large plain letters, readable at a considerable distance by the occupants of any approaching vehicle. The words "Sound Sparton" were written directly beneath the words "Honey for Sale," and in somewhat smaller letters, but large enough for automobilists to read on near approach. Mr. Pritchard says that the direction to "sound

ard tell his own story of "roadside" honey-selling.

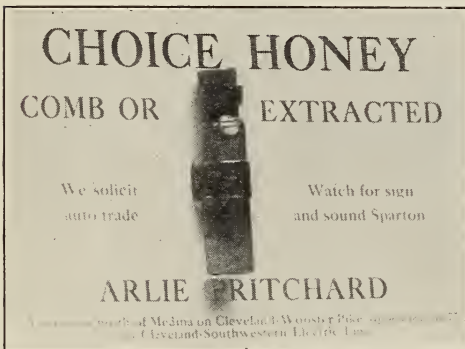
"We put the honey-sign up on October 11," said Mr. Pritchard. "making the lettering of the sign conspicuous, and its position at the roadside conspicuous too. The possibilities in roadside selling of honey were called to our attention by the fact that travelers, attracted by our apiary in plain view at the rear of our house, frequently called and asked if we had honey for sale. So it occurred to me that if we should display a sign announcing honey for sale it would increase the number of prospective purchasers calling, and perhaps develop quite a business. You see, it was the hives in plain sight that first led a considerable number of travelers to stop and call at the house for honey which resulted in our beginning roadside honey-selling. So, I would first emphasize the great importance of having a neat-looking apiary in plain view of the road.

"No sooner had we put the sign up at the roadside than the number of callers at the house asking for honey increased tremendously. Today is December 11—just two months since we put the roadside sign up—and we have sold at our door 3000 pounds of extracted honey and nearly 20 cases of comb honey. This has all been done, too, with no loss of time from regular work. Odd moments have served to do the work connected with the selling. Experience has taught us some things about selling in briefer time and with less work than at first. One simple time-saving and labor-saving device is this: A tray for carrying honey to the roadside, the bottom of which was made from a cheese-box cover, having a half barrel-hoop nailed to this for a handle. This tray has served to carry all sizes of honey jars and pails (except the very largest) to the roadside, and so give the prospective customer full knowledge at first sight of just what we had to sell.

QUALITY AND PRICES.

"The comb honey that we have sold would be graded as 'Choice' and not 'Extra fancy' nor 'Fancy,' but all of first-class table quality. The extracted honey that we have sold was all of the very best quality.

"The price we got for comb honey was uniformly 20 cents a section, generally weighing about 11 or 12 ounces. For extracted we got 20 cents for a one-pound jar; 35 cents for a two-pound jar; 50 cents for a three-pound jar; 75 cents for a five-pound jar; 90 cents for a six-pound jar; \$1.40 for a ten-pound pail, we furnishing the pail of course.



A crackerjack business card.

sparton," printed on the sign, has proved a very important part in making honey sales. It informs the automobilist that by sounding his sparton he can learn and see just what is for sale without even getting out of his machine. A sparton heard in front of the Pritchard residence brings a prompt response from some member of the family ready to show honey wares. Many an automobile traveler has bought honey at this place who would not have done so had it not been possible to open negotiations by merely sounding the automobile's horn.

The picture in the lower right-hand corner of the accompanying page (showing various honey-signs) is from a photograph of the Pritchard roadside honey-sign. Observe how plainly and largely the words "Honey for Sale" are printed (and this was done by hand by Mr. Pritchard himself), and note further how easily and efficiently the sign was placed by attaching it to a telephone-pole directly beside the roadway.

HOW ONE MAN DID IT.

With this mental picture of the premises and the honey-sign in mind, let Mr. Pritch-



IMPORTANCE OF THE PACKAGE.

"Right here something should be said about the importance of appearance and the containers in which you offer honey for sale to travelers. The traveler who visits your home for the first time to buy honey, and who is ignorant of honey conditions (as the public generally is) is suspicious as to the quality and purity of all honey. For this reason he wants to see the honey that he is to buy before he buys it. Therefore they prefer honey in glass jars—at first, any way. So my one-pound package is a round glass jar. At first I sold two-pound and three-pound packages in tin pails, but later I cut out both of these tin packages, as my experience taught me that customers did not wish to buy honey in these amounts out of sight and unseen. I now sell three pounds in a quart Mason jar. I sell five pounds in a friction-top tin pail, but this is because I can not secure any five-pound glass container. The six-pound package is a two-quart Mason jar. The largest package I sell, ten pounds, is contained in a friction-top pail. A good many people ask me why I have such a variety of packages and of so many different sizes. I think it is necessary to have this variety in order best to satisfy customers and sell the most honey. But if I were to have but one package it would be the three-pound Mason glass jar. I have found this the most popular, and sell the most of them. But just to show that people will take something else than what they exactly want in the honey line, I remember that one day I sold nine ten-pound pails to customers, most of whom wanted a five or six pound package of honey, neither of which I chanced to have on that particular day.

"What I would emphasize most of all about honey-packages is that customers want to see their honey before buying, and so the glass package is preferable to the tin in almost every instance.

"Right here, in connection with packages, perhaps comes in the question of the label used by me. I use an ordinary printer's stock label in which a blank is left for the name of the honey-seller, and I write my name on such label by hand. The label is neatly printed in colors, and I write on it the size, my name, and the net weight of the package.

THE MOST IMPORTANT SALES FACTOR.

"If you ask me what is the most important factor in selling honey at one's home, I hardly know how to answer you. The apiary, a hundred yards northeast of

my home, and in plain sight from the road for a considerable distance either way, probably first attracts the attention of most passersby. The honey-sign directly in front of the house, and close up to the roadside, probably stops most of the prospective buyers. But you have not yet sold to the man who has both seen your apiary and has stopped in front of your house to inquire about the purchase of honey. You have not got your money yet. But there are certain considerations that have a lot to do with inducing the prospective customer to become a buyer. Almost invariably he is curious about bees and will inquire about the apiary in sight and ask all kinds of questions in general about bees. Accordingly, it is very essential that the honey-seller be a practical and well-versed bee-man so that he can answer such questions. Just as soon as the prospective buyer sees that the seller is a bee-man and can answer his questions he concludes that he is a real honey-producer, and that his honey must be all right. I have known as high as half a dozen autos to be standing in front of my home at one time while their occupants were crowded about me asking questions of all sorts about bees and honey. On Sundays especially I seem sometimes to be conducting a regular educational institution on bees. I remember once selling \$7.00 worth of honey to the occupants of five machines which stopped at one time at my house, and this sale came after I had answered a whole battery of questions from these people about honey and about bees. So I will say that a thoro knowledge of bees and a knack of telling this knowledge to your prospective customers is a very important factor in selling honey at the roadside.

A FRONT-PORCH HONEY DISPLAY HELPS

"I have found another very great aid to selling honey at home is a display of honey placed on a table on the front porch where it can be easily seen from the road. I make up such a honey display and place it on my front porch, especially on holidays or other days when a specially large number of automobilists are likely to be passing our way. This front-porch display is a decided help in securing customers.

UNIQUE BUSINESS CARD.

"Another thing that has helped to bring me customers, I think, is the rather unique business card that I give to all my customers and to all my prospective customers. It is printed on a good quality of card-board, two and a half by four inches. The unique and striking feature of this busi-

ness card is a tiny bottle of extracted honey fastened at the middle of it. This tiny bottle is only a little more than an inch in length, and fastened to the card by a small tin band, the ends of which band are made to pierce the card until it binds the bottle fast, and then the ends of this tin band are turned and flattened against the back of the card, thus securely holding the bottle. At the top of the card is printed "Choice Honey, Comb or Extracted." At one side of the bottle is printed "We solicit auto trade." At the other side of the bottle is printed Watch for Sign, and Sound Sparton. At the foot of the card I have my name and location printed. The presentation of this card always excites an expression of pleasure and surprise. I think it is a very effective business-getter.

WHAT CLASS OF CUSTOMERS.

"If you ask me what class of people constitute the largest part of my honey customers, I hardly know how to answer. Very little of our honey trade is local. The very large majority of all our customers come to our door by auto, and a majority of the machines that stop there are Fords. This would indicate that a majority of our customers, then, are not of the wealthiest class. I should say that this majority is made up of the well-to-do middle class of people, such as ordinarily can afford to own and run a Ford auto. However, I know that some of our customers are of the wealthy class, and they arrive at our place in high-priced autos.

"Most of our customers are residents of Cleveland. Even within the period of two months that we have had our roadside honey-sign displayed, we have learned that many of our first-time customers return to us for second and third orders of honey. I recall one man who has come from Cleveland several times for the sole purpose of purchasing honey at our place, and has purchased in all more than 150 pounds. He buys in quantities of ten-pound pails. I have found that several of our customers purchase for neighbors and friends whom they have told of their own buying of honey at our place. I recall now one lineman for the Ohio Telephone Company whose work brings him to the line passing my home, who has bought as much as \$10.00 worth of honey at one time, most of it for his fellow workmen employed at the telephone company's headquarters. As indicating how readily honey may be sold to those who have an opportunity of buying it, I recall that a number of the motormen and conductors on the electric railway which passes my home have become steady buy-

ers of my honey. In fact, my observation is that people of all classes like honey, and are ready and glad to buy it if it is brought to their attention and made convenient for them to purchase. My reason for saying this is, as before intimated, that my customers come from all classes of people.

THE BEST SALES DAY

"On what days do I sell the most honey? Well, I sell the most honey on the days that the largest number of automobiles pass my home. I should say that Sunday, as a rule, is the day when we have the most calls. Any holiday, because of the large number of automobiles out in the country on holidays, are excellent honey-sales days. Saturdays are also good sales days. Any day when there are a lot of autos on the road is a good day to sell honey at my place.

WHO WAITS ON TRADE.

"Who waits on the trade, do you ask? Either myself or my wife; and if neither one of us is at home, why, of course trade is not waited on. But one or the other of us is almost always at home; and as we both know the prices and about what our customers will ask and what they want, one can wait on the trade as well as the other. It is not hard to make a sale—just know the different prices of the various packages, and be able to answer the curious questions of your possible customers, and you will be able to sell all right."

CHIEF FACTORS IN SUCCESS.

When Mr. Pritchard was asked to sum up the most important factors in roadside honey-selling, in the order of their importance, he said something like this: "Have your plainly printed honey-sale sign directly by the roadside, and don't forget the 'Sound Sparton' part of this sign; have your apiary in plain sight of the road, and have it in the neatest and most attractive possible condition; know how to answer the curious questions of your customers concerning bees and honey—it makes them your friend and leads them to have confidence in you and to come again. Don't forget the front-porch display and an attractive business card. Make your honey-packages of glass rather than tin, because your customers will want to see the honey rather than to take your word for it. When a Sparton is sounded, respond promptly."

SELLING ON A SIDE ROAD.

On this same improved main thoroughfare leading south from Cleveland on which Mr. Pritchard lives, but at a point two miles south of Medina, another "Honey for Sale" sign was displayed, being put up about

August 1. It was a rather crude, hand-painted sign, put up at a cross-road corner, an unimproved dirt road running east and west crossing the main north-and-south thorofare at this point. The sign read "Honey for Sale," and after it was an arrow pointing down the side road to the west. The fact was, that the house where the honey was for sale was three-quarters of a mile west of the main improved road and on an unimproved dirt road.

When the editor called at this house to learn the results of roadside marketing of honey the mother of the young man who produced the honey answered his inquiry. She said that the honey-sale sign had been put up at the corners of the road "just to try it out." Within a month the entire product of her son's thirty colonies of bees had been sold from the house. This amounted to about 1000 sections of comb honey and some 50 gallons of extracted, all of very fine quality. No porch display of honey was made at the house, and an attractive apiary was not in sight from the road. The honey had been sold largely to neighbors within a radius of several miles, altho some automobilists had left the main road three-quarters of a mile distant and come to the house to buy. One such, a banker living about twenty-five miles distant, had come to the place several times to buy more and more honey. No attempt had been made to make fancy or attractive packages for the honey. The comb-honey sections, when sold, were merely wrapped in paper, and the extracted honey was sold in quart Mason jars, and no labels were used. No particular days were noted as best sales days on the side road, showing that the autos did not cut the largest figure in the 18 cents for the pound comb sections and sales at this home. The price secured was \$1.35 a gallon for the extracted, the cans furnished by the seller. It was stated that a better price could have been secured.

When the lady of the house was asked what part the roadside sign had had in bringing about the sales of this entire crop of honey she said emphatically: "Yes, the sign did it entirely. We did nothing to sell it except to put up this sign." And it was a crude one too.

A BOY'S ROADSIDE SUCCESS

Five miles south of the city limits of Cleveland, still on this main thorofare on which Mr. Pritchard lives, and on which Medina is located, is another home where a roadside honey-sale sign was displayed. The picture of the home and the honey-

sale sign on the telephone pole in front of the residence are shown at the center of the accompanying page whereon various honey-signs are pictured. Here a fifteen-year-old school boy was conducting the roadside honey market. Robinson Newcomb is his name, and he is strictly business and enterprise from the bottom of his feet to the last hair at the top of his head. When asked by the editor to tell about his experiences in selling honey from the door of his parents' home he said in brief:

"I put up the sign beside the road in early August, because I had seen this aid to selling mentioned in GLEANINGS. I have only nine colonies of bees, and had sold all my honey within a month, and, in fact, had bought some of another man several miles away to supply the trade that continued after my own honey had all been sold. I sold my comb-honey sections in cartons and my extracted in glass jars, using a label. I got 25 cents a section for comb honey and \$1.50 a gallon for the extracted honey. I also sold a six-pound package of extracted for \$1.00. In all I have sold about 20 cases of comb honey and 185 pounds of extracted. I can not say that my honey was all of the best quality nor of fancy grade—in fact, I sold what would be graded as second-class, but just as good for eating purposes as any. I had much the largest call for comb honey. I would say that the class of people who bought honey from me was the 'Winton-Six class.' By this I mean my customers were evidently wealthy people. The roadside sign did mighty well for me, but I can tell you I am going to have a bigger sign next year and more honey."

It is worth mentioning that this bright keen-eyed boy had had the enterprise to foot it crosslots to a neighbor and purchase honey from him which he resold at his home at a good advance in price. This was young Newcomb's first year's experience in keeping bees; and one of the most striking innovations that he had made in his apiculture was to secure large sheet-iron or tin beer-signs that he had torn down wherever he could find them in his vicinity and placed these over the tops of his hives as winter covers. He considered this use of these beer-signs as an improvement on their original function, and promised more forays on them.

OLD PEOPLE'S ROADSIDE SELLING.

Living at about the same distance from Cleveland city limits as does the Newcomb boy, and on a brick-paved road leading off the main thorofare south from the city,

lives another roadside honey-seller whose sign is nailed to an oak-tree standing in front of his residence close beside the pavement. It is shown in the upper right-hand corner of the accompanying page of honey-sign illustrations. It is an aged but worthy German couple who produce honey here from about twenty colonies of bees, and their advanced years have somewhat debilitated them and perhaps robbed them of some of the ambition of earlier years. As the aged man said: "We don't bother ourselves much." In fact, no apiary was in sight, and the appearance of the premises was not as neat as it might have been. The sign at the roadside had been put up from year to year, and bees have been kept by the proprietor for many years. This roadside honey sign is ordinarily put up when the first crop of honey is taken off and is kept up till this honey is sold. The sign is put up a second time when the second crop of honey is taken off—if the elderly people have time to attend to the selling of it. It is to be remembered "We don't bother ourselves." The sales here are accordingly rather slow, but apparently sure. Only comb honey is produced and sold by the aged couple.

Speaking of his honey-selling experiences, the aged beekeeper of this home said: "Until within a very few years there was only a dirt road past my house, and I couldn't sell all of my honey from my door then. So I would sell some of it to the stores and some of it to neighboring farmers and friends. But since the road past here has been paved I have had enough automobile customers to buy all the honey I have and more. We don't use any cartons, but just wrap up the comb-honey sections in paper and pass them out to our customers. I find that I sell more on Sundays than on any other day, and more during the evening than during the day time. The price I got last summer was 18 cents a section; but just lately I put the price up to 20 cents a section. Occasionally a section will have a little pollen in it, and I sell such a one for 15 cents. The cull and light-weight sections I sell at less than the regular price. It pays to be honest in selling honey, just as in every other business. I find people will come back to buy of you a second time if you have told them the exact truth about what you have to sell. But the sign out there by the side of the road sells our honey—we don't do very much about it except to put that sign up when we have honey to sell and when we have time to sell it."

A STRIKING ROADSIDE SIGN.

In the upper left-hand corner of the accompanying page illustrating honey-selling signs there will be noticed a picture of such a sign made by painting the word honey in large letters on a white-painted hive. This, displayed by the roadside, makes a striking honey-selling sign. While the editor could not learn the details of the honey-selling done at the residence where this sign was displayed, yet he did learn that this sign led to the sale of all the honey produced in a moderate-sized apiary within a few days after the hive sign had been displayed at the roadside. This was on the same main thorofare leading south from Cleveland that has been mentioned repeatedly before in this article.

AN INDIANA BOY'S SUCCESS.

Adding to his testimony given to the editor on his automobile trip over the road and country previously described in this article, we wish to add the testimony of a young beekeeper, Chester Bundy, of Converse, Ind. The picture of his roadside honey-sign is to be found at the lower left-hand corner of the accompanying page illustrating roadside honey-signs. Mr. Bundy's testimony is right to the point when he says:

"I am sending you a post-card picture of my honey-advertising device. I got the cue for it from the advertising number of GLEANINGS in which Dr. Bonney and others tell about their experience. My sign helped to dispose of more than a thousand pounds of comb honey. Our road is a much-traveled one, and people from five to twenty miles around come and buy honey for themselves and for their friends."

Such is the testimony of the roadside honey-sellers of this vicinity as to the efficacy of the roadside honey-sign, the apiary in full sight of the road, the neatness of the premises about the honey-seller's home, the good results of knowing and telling of bees to prospective customers, the right size and kind of packages, and strict honesty of deals. This testimony from the experience of those interviewed by the editor of GLEANINGS points its own lessons without further comment. It points out one of the very best methods of selling the honey crop in populous communities, and especially for the small producer of honey. The efficacy of this roadside selling in sparsely settled communities and off improved roads may be uncertain and perhaps not feasible. But for the beekeeper in populous communities and near large towns it certainly points out the road to larger and quicker profit.

IN the fall of 1915 I had 500 colonies in six yards. Mr. Waters who helped me had another yard, of 100 colonies. Counting the

increase we now have nearly 700 colonies. We do practically all the work, altho whenever we have a large crop of honey we have to have some help. Four years ago we produced \$2500 worth of honey from 200 colonies; the year following, \$3600 worth from a little more than 300. The season of 1914 was the poorest I have seen since I kept bees. There was no early honey and the crop was light, so that we sold only \$1200 worth from 333 colonies. The year 1915 was also poor; but we did better, selling \$2200 worth from 400 colonies. In 1916 the crop will bring at least \$4500 from about 425 colonies, besides making up winter loss and increasing to a total of 550 colonies. The above figures include only my own bees. Mr. Waters has sold, the present year, over \$800 from his. We aim to keep busy thruout the year. The following is a brief outline of our work in the different months.

JANUARY

Two or three weeks of this month are spent in working wax. I think every beekeeper who has 100 colonies or more should make his own foundation. We make, besides our own, quite a quantity for other beekeepers. We dip the surplus sheets as wide as the brood, and also make them heavy. After running thru smooth rolls the sheet is large enough to make six standard sheets, three long and two wide. This is run just as it is thru the foundation-mill and then trimmed. In this way we save time over the plan of running one small sheet thru at a time. At present we use a brood mill, but we are thinking of getting one especially for surplus foundation.

Our brood foundation is made in the same way; but the original sheets being heavier are long enough for only two sheets instead of three. Therefore there are four to a sheet. We use warm water when running the original sheets thru the smooth rolls, but nearly ice-cold water, also plenty of soapsuds, when they go thru the foundation-mill, as the sheets handle better and do not stick as much. We make the surplus foundation 32 to 36 sheets per pound, and the brood 10 sheets a pound. We do not have to paper the foundation in piling it up, therefore we can make it a little

OUT-APIARY MANAGEMENT

Something to Do Every Month in the Year, and What That Something Is

Edgar Williams

lighter than the standard. The home-made foundation does not look as nice as the factory-made; but we like it fully as well for the

bees accept it readily and it goes further. After the sheets are dipped it is no trick for two men to run and trim 60 to 70 pounds in eight hours.

FEBRUARY

The greater part of this month is devoted to nailing hives and supers. As we are constantly increasing our bees we have had a great deal of this work to do. Most of our colonies are in specially made chaff hives. The covers are of thin material, but the outside wall of the hive as well as the bottom-board is made of $\frac{7}{8}$ material. I do not like loose-bottom double-walled hives. Ours are made like the old style with tight bottoms. We think the bees winter better in them, and the hives are much handier when it comes to moving. By our system, moreover, there is seldom any need for a loose bottom or floor-board. With double-walled hives it is an easy matter to fix the bees for winter. We simply put on the chaff trays (baled planer-shavings for packing) and contract the entrances.

Our supers are also special. They take seven wide frames that hang in rabbets like brood-frames, each holding four sections $4\frac{1}{4}$ square by $1\frac{7}{8}$ inches, or 28 in all. For separators we use strips of tin $3\frac{1}{2}$ by $17\frac{3}{4}$ tacked on the back of each wide frame. I much prefer this kind of super. I have some T and P supers which I am trying to sell. With our supers we do not have to take off a whole super at a time. We can remove 4, 8, 12, 16, or 20 sections if we like, as I shall explain more fully later.

When nailing the brood-frames we leave one of the lower corners unnailed with the end-bar shoved in about half an inch. After the wire is threaded thru the holes and fastened we take hold of the end-bar, force it back into position and nail it, thus drawing the wires taut. We use this same plan for tacking the separator tins on the wide frames that hold the sections.

During the latter part of February we commence cleaning our supers and filling them with sections and foundation.

MARCH

Many beekeepers fill their section-holders with sections and then insert the foun-

dition. We do just the opposite, altho I am not saying that our plan is any better. We fasten our foundation by dipping the edge of the starter in melted wax and rosin. To support the pan of wax and rosin over the lamp we make use of a box about two feet in height with the front open. In the top we cut a hole about eight inches in diameter and over this tack a piece of tin with a hole in the center of it just right to receive the tin basin or pan used to hold the wax and rosin. This box is supported so that the top holding the pan will be flush with the top of the bench. Inside the box we place an oil-lamp with the chimney on. A No. 3 burner is best, as it takes considerable heat.

We use two parts of rosin to one of wax. A little rosin shows on the edge of the sections; but of all the honey we have sold we have never had complaint on this account.

We take 100 sections, fold one, touch the edge of the starter to the rosin and wax, insert it in the center of the section, and the job is done. One man can dampen, fold, and starter 2000 sections in a day, and the starter will actually tear apart before it will drop out. Strength is a necessity where the supers have to be hauled to out-yards.

We pile up the sections having the starters in, and super-covers, no queen-excluders. When we have 3000 or 4000 ready we commence cleaning supers and racks and inserting the sections.

We nearly always put 4 to 10 bait sections in the center of half or two-thirds of the supers, the idea being that these are to be placed on the hives first.

As yet the bees have not been looked at since they were packed in November. During the warm days which usually come during the latter part of March we go over each of the yards and see that the entrances are clear. If each colony had plenty of honey the fall previous we do not make an examination as to stores on this visit.

APRIL

After the bees have had several cleansing flights we make a trip over the yard, lifting off the cover and tray, then raising the super-cover and blowing a little smoke under. If the colony is strong, and if there is plenty of honey to last until May, we leave it alone. If it is weak we contract the entrance. If we notice a queenless "hum" we investigate; and if we discover that the colony is really queenless we unite some other weak colony with the queenless colony. If any colonies are short of stores we supply a comb or two of seal-

ed honey. If any colonies are extremely weak, but still contain good queens, we reserve such queens for replacing poor queens in other colonies.

In April we plan to paint all the new hives and supers, also to repaint the hives at one out-apiary every year. We usually paint the hives white, but now and then we use red, yellow, blue, etc. I like the contrast, and I think it helps the bees in locating their own hive. During this month we also nail our shipping-cases, and make the carriers if we have time.

MAY

From May until November is our busiest time. We aim to do four things during May: Clip the queens, spread brood, supply necessary honey, and look for possible disease. We usually get our six yards looked over three different times during this month.

On our first trip we find the queen in every colony, see that she is clipped, and mark her age on the hive. We also make sure that there is plenty of honey. A normal colony will usually have brood in four or five combs at this time, and we slip an outside comb of brood or both outside combs into the middle, thus spreading the brood. In case of colonies that are weak we give a comb of hatching brood and young bees taken from some strong colony.

The second time around we look after the supply of honey again. This time we put a comb of honey, first breaking the capping, in the center of the brood-nest.

On the last round if we run out of combs of honey saved over from the previous fall we feed sugar. We have never done very much feeding of sugar, however. If any colony shows disease we mark it for treatment in June. At this time we again spread the brood with one or possibly two combs in the center, and supply weak colonies with more brood from the strong ones. In spreading brood there is no general rule that can be followed. Some colonies will not stand any spreading, while others will need more than the average.

JUNE

In this locality the clover-honey flow usually commences about the middle of June. However, in the fore part of the month we begin putting on supers. We put two supers, each containing bait sections, on the strong colonies, and one on the weaker colonies. At the home yard a few are run for extracted honey. These, of course, receive extracting-supers. During the swarming season we plan to go over the yards every eight or ten days.

During the fore part of June we kill all

hybrid queens over one year old, and also practically all queens that will soon be three years old. On the next trip we cut out all cells started in hybrid colonies and supply such colonies with cells from one of the hives containing an old queen also killed on the previous trip. On this trip we destroy all cells but one in the hives that had contained these three-year-old queens. In this way we eliminate swarming in at least a third of the colonies in each yard.

About June 20 we commence making increase to atone for the winter losses. All of our hives face the south. In case of colonies preparing to swarm, a new hive with full sheets of foundation or combs is placed on the old stand, the old hive being set to one side, facing the north. The queen and frame of brood is taken out of the old hive and placed in the new one on the old stand, the extra frame from the hive being put in the old hive. At the next trip, eight or ten days later, the old hive is taken away to an entirely new stand, after first shaking the bees from four or five frames in front of the new hive on the old stand. (Combs with cells on them should not be shaken.) In this way the old colony has just enough bees so that the brood will not chill. The supers, of course, were put on the new hive on the old stand at the time the division was made.

This is the most satisfactory way of making increase that I have ever tried. The old colony gives a good account of itself on the clover flow.

JULY

After the first of July nothing is done toward stopping swarming but cutting out queen-cells. As swarming is usually over in this locality by the 10th, this plan is nearly always sufficient. A few may swarm out now and then; but aside from a little mixing up no harm seems to result.

The honey-flow generally lasts until about the 20th. If it is a good flow more supers are added on each trip.

As soon as a wide frame of four sections is found sealed it is removed. About the 25th we commence taking off all the clover honey. We go to a yard with a wagon and blankets and an empty super. We go to a hive, take out all the frames that have any sections that are capped, or partly so. It is not necessary to haul the empty sections home. We leave them on and fill in with others if there are not enough to complete a super. This leaves a super on each hive with some half-built combs to start the bees on buckwheat. As fast as the finished honey is taken off we give each frame a good shake, thus dislodging the

bees, and place it in a super and then wheel or carry the super to the wagon. A few bees will be carried home, but not many. The few that are left on the honey usually take wing when the blankets are raised during the loading of the honey.

To avoid robbers it is a good plan to have two men, one to take off the honey and shake, and the other to carry it to the wagon and load. No hive should be kept open a minute longer than necessary. If robbers get started in one place we go to another part of the apiary, keeping the honey tightly covered on the wagon all of the time. Shaking bees off from only four sections at a time may seem slow work, but it is not. Two men will "strip" a yard a day.

AUGUST

We aim to have the early honey taken off, scraped, packed, and shipped by the 15th of the month. We make two grades. No. 1 is the grade that we ship, and the No. 2, consisting of the sections not fully capped over, which we sell around home. Sections that are too light for the second grade we extract. After this we prepare more sections and refill the supers.

About the 15th we again run over the yard. In fact, we do this every ten days until about the middle of September, because there is often considerable swarming during the fall honey-flow. We do nothing to prevent the swarming except to keep the cells cut out every ten days, and make sure that all laying queens are clipped. The swarming fever is more easily broken up at this time of the year than earlier during the clover flow.

At the August 15th visit we clip all queens in our new colonies, and also in the colonies requeneed early in June. Supers are put on the new divisions, also another on the old colonies if the bees are storing rapidly. At the next one or two visits we simply give more room if necessary and look the combs over for cells.

SEPTEMBER

The work during this month is a good deal like that in July. At the visits during the fore part of the month we supply more room and haul home any frames of sections that are finished. About the 25th the flow from buckwheat and goldenrod is over, and we therefore remove all the honey. We work just as we do in July, except at this time all sections are taken off. About this time we also bring along the chaff trays and the entrance-blocks and put them on.

OCTOBER

This is a busy month, for we scrape, scrape, all day long.

NOVEMBER

We are usually thru with the honey by the first week of this month, then we extract the unfinished sections, strain the honey into a tank, stir it for a day or so, then run it out into paper sacks to granulate. We have a good call for granulated honey in sacks. We think the stirring a great help as it makes a finer grain. It is called "butter honey" here.

As was previously mentioned, some of the colonies in the home yard are run for extracted honey. All the honey that they produce from the fall flow is saved and set away for spring feeding.

During the latter part of the month we again look over the yard. There are a

few of the colonies in single-walled hives, having deep telescoping covers. These are well wrapped in newspapers, and the covers slipped down over the whole. The colonies winter quite well so protected, but not as well as they do in the double-walled hives. Before leaving the yard we see that the covers are tight, and that the front of every hive is lower than the back.

DECEMBER

This is our easiest month. We take a few holidays, straighten up the bee-house, putting things to rights and getting ready for the winter work. Any poor combs that have been culled out during the summer, and all scrapings, are rendered into wax ready for the work in January.

Pierpont, Ohio.



SOMEWHERE

in the past, perhaps about a century ago; the place, no doubt, a mission located in the Americas between the tropic of Cancer and the tropic of Capricorn, a black-robed priest was making a study of the trees and plants indigenous to the soil. And particularly did he become interested in a certain acacia-like tree. The trunk of this tree was not beautiful; in fact, it might be classed as ugly. But the tree had many good features that offset the ill appearance, among which were that the seeds germinated freely, and that the young trees were sturdy and capable of taking care of themselves, and grew in almost any kind of soil. In fact, it seemed to matter little where the tree found a foothold, whether on low coastal land or high arid plains where the altitude was reckoned by thousands of feet. Then, too, the wood of the tree was good firewood, and did not rot when placed in earth or water. The foliage was pleasing to the eye, and the blossoms that the trees bore during two distinct periods of bloom were sweet-scented, and yielded nectar abundantly. The honey gathered by the bees from the blossoms was very light in color, and of good flavor. The fruit was fleshy gray, or golden pods from five to nine inches long. These pods when ripe furnished food for both man and beast. Cattle were especially fond of the pods, and thrived on them. Another feature of

HAWAIIAN ALGAROBIA

*A Prolific, Rapid-growing Tree of
Great Importance to Stock-growers
and Beekeepers of the Pacific*

Leslie Burr

the trees was that the roots, which would go, when necessary, great depths for water, did not impair the fertility of the surface soil; and as the bipinnate

leaves let the sunshine filter thru, the grass, unless the trees grew in dense thickets, grew beneath the trees almost as freely and as luxuriantly as in the open.

A quantity of the seed of this tree was gathered by the priest, and either taken or sent to France, and eventually found its way to the Jardin du Roi de Paris. Just who the priest was that gathered the seed; just where the trees grew, or the exact manner in which the seed found its way to France is unknown, the true and exact facts having been lost or obscured in the dusty corridors of time. All that seems to be actually known is that Father Bachelot was given the seed at the Jardin du Roi de Paris, and that he took it to the Hawaiian Islands about the year 1828; that he planted the seeds, and that at least one seed grew. The tree from that seed still stands.

BOTANICAL DESCRIPTION

This is the tree now known as the Hawaiian algaroba, *Prosopis juliflora* being the botanical name. "Prosopis" means "obscure," and "juliflora" means "catkin-like flower." The tree belongs to the natural order *Leguminosae* (sub-order *mimoseae*).

It is claimed that there are eighteen or more species of the *prosopis*, all tropical



Algaroba-trees. These trees are growing on what is practically solid coral rock. The surface is hard, but underneath the rock it is comparatively soft. There is practically no soil on the surface.

or semi-tropical plants, and are found in the country lying south from southern Texas to Chile, the mesquite of Texas being one of the number.

The size and height of the Hawaiian tree depend on conditions. If conditions are favorable the tree reaches a height of forty-five or fifty feet, and the trunk a diameter of two feet or more. In Hawaii the tree grows very rapidly, in that respect surpassing the eucalypti that have been introduced into Hawaii. As to the periods of bloom, in Hawaii the first bloom commences in May and the last generally ends some time about the first of October.

ALGAROA WOOD AS FUEL

Algaroba is the chief source of fuel in the territory of Hawaii. It also makes excellent charcoal. In addition to being valuable as fuel, the tree furnishes a gum suitable for use in varnish, and the bark contains tannin. Then, too, the tree being a legume, it is a soil-maker of some importance. The wood is also suitable for short-length piles, as the wood is relatively free from attack of the toredo, the great enemy of wood that is submerged in salt water.

WHERE ALGAROA WILL GROW

The algaroba is an evergreen tropical or semi-tropical tree, and there is no reason to suppose that it would be possible for it to grow further north than does its sister, the *mesquite* of Texas and Mexico.

SOIL WHERE ALGAROA WILL GROW

It is found along the coasts of most of the Hawaiian Islands, and thousands of acres are growing on the sea-level. In some places the waves splash on the foliage, so near to the sea does it grow. But the tree seems to do best at a slight elevation, and no doubt it will grow at any elevation where the *mesquite* will grow. At the present time I think that about 2000 feet is as high an elevation as the tree has reached. All that the tree seems to want is a place to find a foothold, a little soil, and some moisture. As the Hawaiian Islands are all of recent volcanic origin, the kinds of soil here are limited, which likewise limits observation as to what soil is best for the tree.

As to climate, a semi-arid climate seems to suit the tree best; but, as in the case with soil and with altitude, the algaroba is not very partial, and seems willing to accommodate itself to conditions.

EXTENT OF ALGAROA FORESTS IN THE HAWAIIAN ISLANDS

On the lee side of practically all of the islands there are enormous forests of algaroba, the forests extending from the sea-

shore to an altitude of a thousand feet or so. As most of those who read this are not personally acquainted with the Hawaiian Islands, a word of explanation concerning the so-called lee side of the islands will not be out of place. The reason for there being a lee side is the trade-winds. These are easterly winds that blow, with but few exceptions, during the entire year. The easterly side of the islands is, therefore, spoken of as the windward side, and the westerly side as the lee side. The trade-winds cause an entire change of climate to exist on the opposite sides of the islands, even tho the island is but a few miles across. On the windward sides there is a heavy rainfall, some places in excess of 200 inches for the year, and at times it reaches 400. On the lee side there is less rain, in some instances being an almost total lack of rainfall, causing deserts to exist in some places. It is where the heavy rainfall exists that the algaroba does not thrive, or is entirely lacking.

ALGAROA AS A HONEY-PLANT

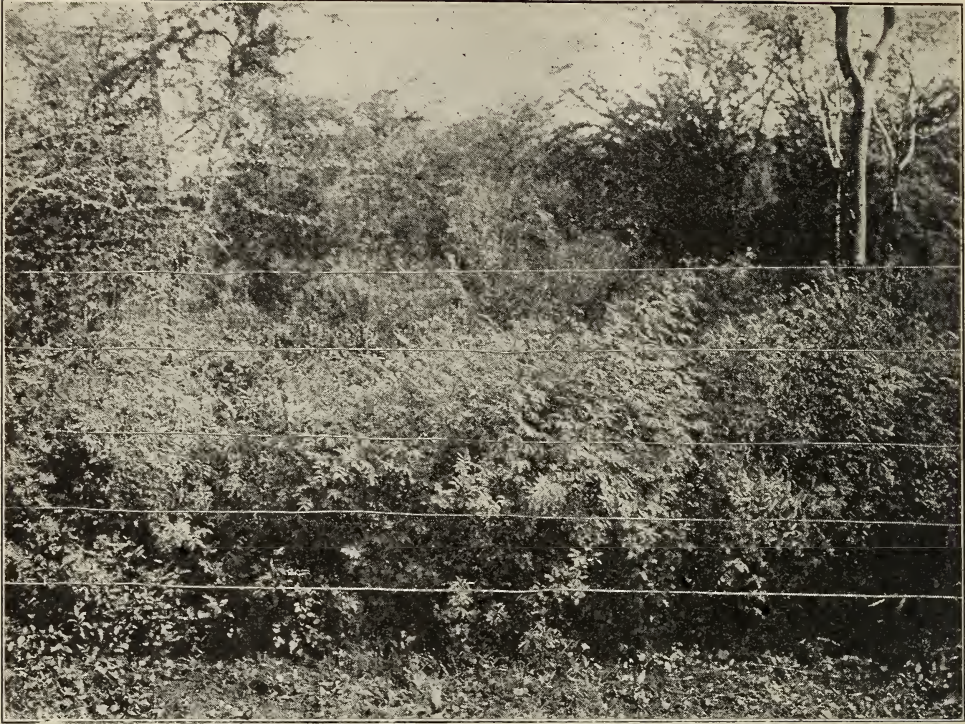
Algaroba is the only good floral honey that the Hawaiian Islands produce to any extent. In color the honey is almost water-white, and has about the same body as white clover. The flavor, aside from being good, is distinctive, and no doubt the public, wherever the honey is sold, acquire a preference for it the same as with alfalfa, sage, white clover, etc.

ANALYSIS OF ALGAROA HONEY

As is well known, most of the Hawaiian honey is not normal. As is shown by Bulletin No. 17, "Hawaiian Honeys," by the Hawaii Agricultural Experiment Station, the honey from the algaroba is the nearest normal. Its only difference from normal honey is in the matter of having a high ash content. The ash in algaroba honey varies between 0.44 and 0.59 per cent, while, according to the official standard, pure honey should not exceed 0.25 per cent of ash.

WHAT PROPORTION OF HAWAIIAN HONEY IS ALGAROA

According to the last-mentioned bulletin, in 1906 the Hawaiian Islands produced a total crop of about 600 tons of honey. Of this amount some 200 tons was from algaroba. Since 1906 there has been considerable advance in the number of bees in Hawaii, and I suppose an increase in the amount of honey; but just what percentage of the honey during the past few years has been from algaroba I have not been able to ascertain definitely. Some claim that it is now half. This may be true, as



One of Mr. Gilbert's pig-fences. The small trees just back of the fence are small algaroba-trees, only four months from seed. These are planted closely together for the express purpose of making a "pig-proof" fence in three or four years. The trees also, a few years later, furnish food for the pigs which are very fond of the algaroba beans, and fatten readily on them.

no doubt there is less honey-dew honey since the leaf-hopper, the pest that at one time threatened the extinction of the cane-sugar industry of the islands, has been brought under control.

SOME GENERAL DATA ON HAWAIIAN ALGAROBA

When I started to collect algaroba data I asked Oswald St. John Gilbert, manager of the Sandwich Island Honey Co., and Treasurer of the Algaroba Feed Company, both Hawaiian corporations, and who is, perhaps, the best-posted man on the subject of algaroba in Honolulu, to give me his estimate as to the number of acres of algaroba on Oahu; the amount of beans that a tree would produce; how long it takes a tree to bear; how heavy a honey-yielder the algaroba is; and the amount of algaroba being now planted. The figures Mr. Gilbert furnished me are as follows:

AS TO EXTENT OF THE ALGAROBA FORESTS

There are in the neighborhood of 17,000 acres of algaroba on the island of Oahu. As to the amount of beans that a tree would produce, his estimate is that a tree with a thirty-foot spread, planted from select seed, under normal conditions, will produce ap-

proximately five hundred pounds of beans. As to the annual crop, many of the trees are yet small, and his estimate of the annual crop for Oahu is approximately 25,000 tons. As to how many years it takes before a tree will produce pods, he replied that a tree from selected seed should produce pods in from four to six years. It is a rather difficult matter to get at the amount of honey produced, yet he thinks that a tree with a thirty-foot spread of branches would produce two and a half pounds of honey in a normal year. In the matter of the amount of algaroba being now planted, he stated that it is still being spread by cattle, the reason being that, as most of the stock pick up the pods from the ground underneath the tree, the seeds, being uncracked, are not digested. In the matter of systematic planting and caring for algaroba-trees, the Gilbert & Dowsetts interests are the only people on Oahu who are doing it. During the year 1916, prior to October 1, they had planted under his supervision over a hundred thousand algaroba-trees. These trees were planted for stock food, firewood, and for honey.

Honolulu, Hawaii, Oct. 28.

THESE are two angles of approach to the subject of apiculture. The first is purely academic. The scientist studies the bee as he might study the vermes or extinct geologic specimens; and the man who obtains his doctor's degree for profound histological research might erstwhile be unable to produce a decent super of comb honey or get a lone queen-cell accepted.

The second angle of approach is practical. A man knows his job. He may not be conversant with the veriest elements of biology. He may never have looked thru a microscope. But he knows when the tops of his combs are beginning to be fringed with whiteness it is time for supers. He knows swarming plans. He knows how to get queen-cells accepted. Scientific talk is to him gratuitous jargon. He achieves results—and that's all he is after.

Now and then you find a rare man who is big enough to embrace both points of view—to reinforce practical apiculture with profound scientific knowledge. Such a man, for instance, is my esteemed namesake and acquaintance, Dr. Phillips, of Washington.

While the majority of our successful beekeepers are not college men, it seems to me the thoro conception of a few fundamental biological laws might greatly expedite their earnest efforts to achieve those finer strains of stock for which all bee-breeders strive. At least, it would point out the main paths of possible progress, and save time wasted in following "blind alleys."

SOMA PLASM VS. GERM PLASM.

There are, so to speak, two kinds of material that enter into the structure of an organism. The first is "soma" or body plasm. It is local and short-lived. It begins with the individual. It ends with the individual. Its inheritability is almost negligible. The fact that a blacksmith develops big muscle is (if that muscle is acquired and not an inherent tendency) no indication that his child will be robust. The fact that a man loses an arm in a railroad accident is no forecast that his progeny will be one-armed. In either case the change is in the "soma" plasm.

The second element is called "germ" plasm. That is everlasting—carrying the essential characteristics inherent in the individual down thru the long lines of her-

FALLACIES IN BREEDING

*Raising Queens from the Best Honey
Producing Colony Not Always the
Best Policy in the End*

Geo. W. Phillips

redity. Germ plasm is the physical vehicle for the transmission of life; and any essential change in the germ plasm is at once grasped upon by nature,

and, if it possesses survival value, becomes a dominant factor in progressive evolution.

ACQUIRED CHARACTERISTICS VS. VARIATION.

Corresponding to soma and germ plasm are the two well-known factors of organic development: Acquired characteristics and congenital variation. The first applies to those characteristics acquired in the life history of the individual. They indicate changes in the soma plasm, and their influence upon heredity is *extremely* slow—some scientists say, not at all. At any rate, for practical current beekeeping they are negligible. How many ages did it take to bronze the Indian or bleach the Caucasian?

The second element is *congenital variation*, and implies a change in the germ plasm itself. This may be considered under two aspects:

1. *Gradual variation.* No two peas in the pod are exactly alike; no two queens. These variations are probably due to the several possible combinations of the male and female elements in breeding, as well as to the recurrence of far-off ancestral traits. Some of these variations tend downward (reversion); others tend upward (evolution). Right here is the queen-breeder's chance. By carefully selecting those queens whose colonies show desirable qualifications he may greatly assist nature in giving the desirable traits survival value. And this is the reason why some careful breeders may produce gentle bees, hardy bees, yellow bees, etc. In fact, it is my opinion that by this method may be produced even a strain of bees immune to certain diseases. It is well known that certain Arabian tribes, altho they drink water infested with typhoid bacteria, are immune to typhoid fever. Why? Because those individuals who were susceptible have died. Those remaining can't die. Perhaps nature, unaided, would in time weed out in like manner all bees susceptible to European foul brood and leave a race immune. But this end might be tremendously hastened by the intelligent apiarist.

2. *Mutation.* This is sudden variation. It implies a drastic modification of germ plasm, and is immediately transmitted thru

heredity. In common parlance we call it a freak of nature. For instance, the phenomenal Root queen would represent a mutation—an upward bound. And could the mating of her offspring have been controlled, she might have proved the parent of a transcendent strain. The Concord grape was a mutation from the wild grape.

It will be seen, therefore, that the beekeeper must ever be alert to detect these desirable variations, and not waste time upon stocks whose characteristics are acquired. The latter lead us only into blind alleys. For instance, you say gentleness is an essential. Colony No. 1 is gentle; therefore, breed from that queen. But why is colony No. 1 gentle? Perhaps because said colony is rendered docile by frequent contact with people. Queens from that colony may develop vicious bees. The characteristic was acquired — not inherent. For instance, again: Colony No. 2 has produced a tremendous honey crop; therefore breed from that queen. But why the big crop? Perhaps because the queen was a vigorous layer. But *why*? Perhaps because she was well reared. Her cell was built by a roaring colony in the swarming season. If the vigor her colony displays is due to the numerical abundance of bees she produces, and not to the inherent quality of the individual bee, her daughters may be doomed to mediocrity.

The other day I read an article about a beginner who had bought several Italian queens and a swarm of black bees. The blacks produced a bigger surplus; therefore he favored the blacks.

But why did the black colony transcend? Simply because, for some reason, the black queen had a better individual life history. The Italians, while possessing a far better racial history, were probably not so well nourished as queen-cells, or were growing old. But given an equal chance in the second generation, the inherent vigor of the Italians would predominate, and the blacks would be left in limbo.

Right here is a fine point to be considered in the production of queens. There are two kinds of people who purchase queens: Those who buy for breeding, and those who buy yearly for honey-gathering. A poor layer may be highly profitable to the breeder, provided she is not genetically so. Her lack of fecundity may have been brought about by old age, accident, or even because of poor nutrition in her larval stages. But these are soma-plasm modifications. Her well-bred daughters will immediately "revert" to the high type of her ancestral line. Really, I do not believe the prolificness of

an individual mother ought to be so loudly proclaimed as a breeding asset—only so, if that prolificness be congenital. Give me a poor layer from a vigorous honey-producing strain, and let her poverty of eggs be due to her own improper larval nourishment, and I am sure I could produce from that queen daughters of maximum prolificness. In breeding it is the *racial* line that counts. So much from the breeder's standpoint. But the honey-producer also buys queens; and let us say that he buys absolutely all his queens, rearing none. Then the vital question with him is not the *racial* but the life history of the queen. Of course, if both are combined so much the better. But of the two, the queen's life history is the predominant requisite. A queen may be of the finest strain; but if she is old, if she has a leg injured, if she emerged from an improperly nourished cell, good by honey!

In other words, if I am a honey-producer I will sacrifice racial vigor to individual vigor. I can do better with a well-reared queen from poor stock than with a poorly reared queen from fancy stock. If, on the other hand, I am a breeder, I will sacrifice individual vigor to racial vigor. I can do better with a poorly reared queen from fancy stock than with a well-reared queen from poor stock. Here I am after germ plasm—not soma plasm.

Ignorance of these principles often leads to the most ludicrous conclusions. For instance, years ago, while I was yet in the West Indies, there was much controversy about clipping queens' wings. Some one even declared certain of his bees were hatching wingless because his queens for generations had been clipped! Such a man had evidently forgotten that horses' tails have been cut short from the time of Pharaoh—and dogs' also. Yet hounds and horses are still born with normal tails.

The same applies to the fiction of "Northern-bred Queens." A white man in Africa is a white man. It will require aeons to make his burnt skin in the slightest degree hereditary. A standard Doolittle queen reared in Florida is as good as a standard Doolittle queen reared at the North Pole.

Lebanon, Ohio, Sept. 26.

[Mr. Phillips, as many of our readers know, while not related in any way to Dr. E. F. Phillips, has been quite prominent as a beekeeper and queen-breeder. Born in Jamaica, he was a successful beekeeper in that country, and after coming to the United States was for several years head queen-breeder for the A. I. Root Co.—Ed.]

BEES TRIED BY FIRE

*A Remarkable Case Showing How
Bees Can Keep Down the Temper-
ature in the Hive*

By E. R. Root

burned out from under the tin roof, but the top-bars of the brood-frames were charred half way down. That a colony could survive under such

AT our recent lumberyard fire a little backlot apiary belonging to A. L. Boyden's boys was located within 100 feet of the piles that were burned. The heat was so great that it looked at one time as if the lumber, including all our manufacturing plant, would be reduced to ashes. During the general excitement the little beeyard was forgotten. After the fire was over, a hive located nearest the fire stood out as a remarkable instance of the power of the bees to keep the internal temperature of the colony down in spite of a \$25,000 lumber fire near by. The engraving below, when it is understood that there was a nice colony in the hive "after it was all over," almost tells its own story, and a wonderful story it is.

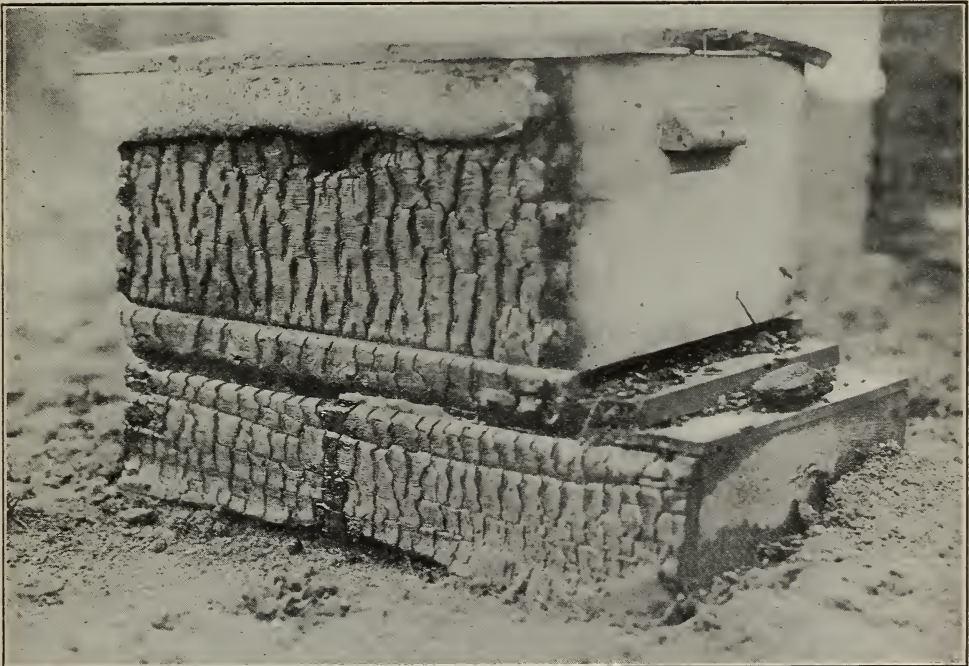
The heat was so intense that all the wood-work under the metal cover was burned away, even the front rail. A piece of it is shown where it dropped down at the entrance. The fire not only burned deep on the side but actually burned a hole thru the center. The comb next to it was melted down, as will be seen by the black stain where the wax ran on to the side board of the hive-stand. Not only was the wood

conditions is unbelievable.

Any one would have supposed that they would have been driven out of the hive, and that all the combs would have melted down, and that the wax would have ignited, leaving nothing but a pile of ashes. But, remarkable to relate, at the time the photograph was taken there was a nice colony of bees, and all the combs were intact except the one next to the hive, which had been melted down.

These bees, as soon as the hive became scorching hot, must have gone into the business of ventilating with the knowledge that the flames of hades were after them. The men who fought heroically to keep down the big lumber fire could not have worked harder, and every bee must have gone into the business of fanning, blowing a current of cold air into the hive and the warm air out. It surely was a life-and-death struggle.

We have heard of instances where colonies left out in the hot sun have had their



The bees that kept the inside of the hive cool in spite of the fire.

combs melted down; but evidently they had a restricted entrance, or too many bees in the fields, to keep up the necessary ventilation.

Why the hive here shown did not burn up entirely will remain an unsolved mystery, unless we admit that a good colony can do more in ventilating than we usually give it credit for. It is possible and even probable that some fireman, seeing the plight of the hive, dashed a pail of water on it and

thus saved for us a relic that is exceedingly valuable in showing the power of bees to keep down the internal temperature of the colony, even tho the outside of the hive was afire. It will be noticed that the entrance is $\frac{7}{8}$ by the width of the hive, and that would afford ample ventilation. If it had been contracted down to the usual space, in all probability the combs would have melted down and the bees been destroyed.



OUR readers will remember that several times during the last year we have spoken of troubles between the smelters and the beekeepers in

Ontario, Canada. We also stated that the beemen had brought joint suit against the smelters, claiming \$30,000 damages.

For the benefit of those who do not understand, it should be explained that a smelter is a plant for the reduction of ores. The raw ores consist of rocks in which are incorporated various metals—gold, silver, copper, zinc, etc. These rocks are ground up and then subjected to an intense heat. The various gases arising from the reduction are carried off thru high stacks. These gases consist of SO^2 and SO^3 , and, with water, H^2O , make H^2SO^4 , or sulphuric acid. SO^2 (burning sulphur) is the gas used to kill bee-moth, and, of course, if strong enough, would kill bees.

A great deal of free arsenic is carried out thru the stacks of the smelter in the form of dust, and the dust falling on the vegetation in the immediate vicinity forms a grayish-white deposit which, uniting with the dews, forms a sort of coating over all plant life within reach. This coating on hay crops has been reported in several cases to have caused the death of domestic animals and to have destroyed the vegetation itself in some cases.

In nearly all places where smelters have been located in the United States, bees have died off. The claim is made that the free arsenic, uniting with the pollen dust, nectar, and the ordinary dew of the morning, is carried by the bees into the hives; that this poisonous mixture, whether in the form of nectar, pollen, or dew, kills off both the bees and brood. Arsenic is only par-

BEES VS. SMELTERS

A Famous Case Comes to Trial in the Supreme Court of Ontario, Can.

By E. R. Root

tially soluble in water, so when it is taken into the hive mixed with water, pollen, or dew, it forms a mechanical combination—not a chemical mixture.

In either case it would be poisonous.

Arsenical sprays are used very largely nowadays in spraying fruit-trees to kill off the codling-moth. The poison known as the arsenate of lead is mixed with water. This combination is then thrown by means of spray-pumps on the trees, causing a coating of the arsenic on the leaves and blossoms. The larvæ of the moth, by eating these, are destroyed.

That the arsenate of lead is a rank poison to bees is shown by the fact that certain states have passed laws against the throwing of arsenical sprays on trees while in bloom, because experience shows that the bees are killed by gathering the nectar from the blossoms that are coated with a deposit of arsenate of lead. Experience also shows that bees are killed where the arsenate of lead falls on "cover crops" beneath the fruit-trees in Colorado sprayed when the trees are not in bloom.

While there has been a general complaint that bees in the immediate vicinity of smelters die off in large numbers, no suit for damages was brought against any smelters until 1907 in Utah, where the smelters paid \$60,000 damages to the beekeepers.

For a year or so back, there have been reports coming in, telling of a fearful loss of bees in the vicinity of the Coniagas Reduction Co., of Thorold, Ontario. Something like 700 colonies, it is claimed, have been killed outright. For miles in all directions one sees beautiful fruit and farm lands, and these, within a few years, have been devoted to the growing of fruit as

well as general farm crops. In such a locality bees would naturally thrive.

A few years ago this big smelting concern, having a reported capitalization of three and a half millions of dollars, located their plant at Thorold. Shortly after, complaints began to pour in of bees dying it was claimed as the direct result of the smelter smoke, the bees dying worst in the direction of the smoke carried by the prevailing winds. Finally the beekeepers in the locality combined together in a joint suit against the smelter company. The case was postponed from time to time, but finally came to trial on Nov. 30. Whether the fruit-growers and farmers joined with the plaintiffs in the action we are not advised; but evidently they were very much interested, because, if the smelters killed off the bees, it would cause a marked reduction in the volume of their fruit.

The best legal talent was employed on each side, the case being fought in the supreme court of Ontario at St. Catharines.

The plaintiffs, of course, introduced the case of Utah, where the smelters paid the beekeepers \$60,000 damages. They also introduced evidence to show that horses belonging to the smelter company died, which the defense admitted, we are informed.

The direct testimony of the beekeepers who had suffered loss showed that their bees died in large numbers—in 1909 more particularly, and every year since, within a range of from one-fourth to five miles of the smelter. But the loss it is claimed has been less since the company has used screens for catching the free arsenic.

The defense sought to show that the bees died from natural causes; that the symptoms described by the beekeepers, of bees dying, were the same as those of bee paralysis, Isle of Wight disease, and the disappearing disease. It also tried to show that brood diseases might progress far enough so that the old bees would die off, and the colony thus become extinct, because there would be no new blood to supply the loss.

The editor of GLEANINGS was called in by the plaintiff to tell how far bees would fly—to describe the various adult bee diseases and to show that the symptoms as reported by the various witnesses of bees dying within the vicinity of the smelters were not the same as those of the Isle of Wight disease or bee paralysis.

We were kept on the witness-stand for about three hours and a half. Prof. Morley Pettit, of the Apicultural School of Guelph, next followed as expert witness for the plaintiff. The defense "went af-

ter" both of us—a matter to be expected. Our testimony tended to show that the reported symptoms were not the same as those of adult bee diseases, but, rather, of poisoning.

At the time we left, Dec. 2, it was hard to say how the case would go; but we have been informed that the main plea by the defendant was that the plaintiff had "made no case." The judge has taken the matter under advisement, but at this writing he has rendered no decision.

A decision for the plaintiffs, if we understand it, will not mean that the smelters, who employ an army of men, will have to shut up shop; but it will mean that they will be required, probably, to pay damages already sustained, and to use better means for preventing free arsenic from going up the stacks and being scattered all over the vicinity, destroying vegetation as well as animal and insect life.

There were some amusing incidents that came up during the trial—particularly interesting to the beekeepers present. The attorneys on both sides of the case had been "cramming" up on bee-lore. They had hunted up everything on the subject of bee diseases, poisons, smelters, distance bees fly, and anything and everything that might have a bearing on the smelter question. Some of the questions were funny, showing that "a little learning is a dangerous thing." Some questions could not be answered by yes and no, because they assumed impossible conditions. Other questions could not be answered in the manner stated, and his lordship the judge was fair enough to ask counsel to restate their questions.

One question asked by the defense was that, "Assuming that all the brood in a hive was dead as the result of foul brood, would not the bees gradually die off, leaving nothing but the hive and combs?" We replied by saying that "The condition referred to rarely if ever occurs." Counsel came back by saying, "You did not answer my question. I am not asking you to answer another question." After some parleying we were permitted to say that foul brood alone rarely kills a colony; that only about half the brood would be involved in the worst case, when the colony in its weakened condition would die as a result of spring dwindling, or winter cold. Defense was evidently anxious to show that foul brood could and does kill adult bees during the summer time and therefore might explain bees dying near smelters.

As soon as a decision is given by the judge we will announce the result.



Conversations with Beekeepers

"I have kept bees for three years beginning with three colonies, and now have fifteen. I am thinking of taking up beekeeping as a business. Is it safe to depend upon honey-producing alone for a livelihood?"

If the circumstances are right, it is safe for nearly any person to make apiculture his sole business. This is not saying that no one except the specialist can keep bees to advantage. Many of our most successful apiarists do not depend alone upon beekeeping for their livelihood. In fact, the majority of those entering the ranks of apiculture mix general farming, dairying, poultry, truck-gardening, or something of the kind with the bees.

One of the very important things about the keeping of bees as a business is the location. There are localities so poor—that is, so lacking in honey or nectar producing flora—that it would be folly to attempt the keeping of bees as a business. Suppose the place to be one where nearly all the land is used for the raising of wheat, oats, corn, cabbage, and potatoes, thus being kept "under the plow" nearly all the time. It goes without saying that ten or even twenty square miles in such a locality would not keep 100 colonies, to say nothing of a surplus. But with plenty of willow, maple, and fruit bloom to give the bees a good start in the spring; clover and basswood for the main surplus and buckwheat and fall flowers for the "wind up," one-half the square miles mentioned should prove a bonanza to the man or woman who has a taste for beekeeping, and who is able-bodied, diligent, active, and skillful withal.

More depends on the man than on any other one factor unless we except location. Some can build up a magnificent business in beekeeping where others fail. The beekeeper must have a love for the business; perhaps this has more to do with the successful outcome than any other quality. One really in love with beekeeping will leave no stone unturned, will consider no hardship too great, will not be turned aside by one or a hundred stings, nor be tempted to sit in the shade on a hot day. All hardships are but pleasures to one having the "bee fever." Have you

ever watched the successful players in a ball game? What do they care for the hot sun or the strain of muscle necessary to win? With me, a ball game is no comparison to the pleasures of beekeeping. However, our questioner may not consider that pleasures have much to do with livelihood. Of course, the matter of dollars and cents must be looked after, or it will be "over the hills to the poorhouse." But I wish to go on record as saying that dollars and cents come in the greatest amount to the one who is carried away with the *love* he finds in the chosen vocation.

As to the number of colonies which should be kept, there is a difference of opinion. Some say from 250 to 300, others 500 to 800. This is quite an important point, and one frequently overlooked, especially as to how many the locality will permit of keeping to the best advantage. "If a man in a good locality keeps only enough bees to support him in a good season or, possibly, in an ordinary season, and then comes a succession of poor seasons, some other business must be added to the beekeeping." So said a successful apiarist some years ago, and then he added: "And the best thing to add is some more beekeeping; but, strange as it may seem, few seem to look at it in that light."

Men like W. L. Coggshall and S. D. House, of this state, have gone into beekeeping extensively, established out-apiaries, managed their business as a *business*, instead of merely a pastime, and have succeeded to an extent which should satisfy any intelligent person. One or two good years with a large number of colonies of bees in a good location enables the owner to lay up enough to tide him over several years of poor or indifferent crops. The trouble with a small number of colonies is that not enough honey is secured, even in good years, to enable the owner to put very much money in the bank, beyond what is necessary to keep his family and the bees over the poor seasons, and so he has very little to carry his family along when old age arrives, or when sickness lays him aside for a few years in the prime of life. It is for this reason that it is an advantage to have more bees scattered about in several out-apiaries as this plan tends to secure a crop each year. Localities



FROM THE FIELD OF EXPERIENCE



differ to a great extent, even when only a few miles apart. In an average or somewhat of an "off year," enough will be gathered by all of the apiaries to "make a living;" and when one good year follows another, as quite often happens, enough can be laid away to build a home and fix for a comfortable old age.

Borodino, N. Y. G. M. DOOLITTLE.



Letters from a Beekeeper's Wife

Home, January 1, 1917.

Dear Sis:

The Christmas box that came the day before Christmas from your house could not have been more enjoyed. Billie has been out on his skates every day since, and the girls are delighted with their muffs. They have always wanted furs but we thought we couldn't afford them. Now that they have muffs we are going to take the money out of our private I. P. T. A. fund and get them neck pieces to match.

Have I ever told you about the I. P. T. A. fund? It stands for "It Pays To Advertise"—and it certainly does. We never realized how much it pays until our road became part of the Jefferson Highway. A year ago last autumn, just after the concrete road was laid, we found that we had considerable fall honey which was very good but it was what the buyers call "off color." Rob conceived the idea one day as we sat watching the autos whiz past that we might be able to sell that honey to passersby. That is an undeveloped trade, so if we can sell to them it means just that much more honey disposed of.

He talked about it all winter off and on, but, man-like, never did anything until spring. One day he painted a big sign, "HONEY FOR SALE," and nailed it to a post at the gate at the east end of the lot. It wasn't a sign painter's job, and may be that convinces the city folks that we have "bee honey." Mother was here at the time and may be she told you how scandalized she was by that sign! I don't see just why she thought it so much worse to sell honey at our door than to send it away to be sold, but in her mind it "lowered" us in the social scale to have the sign up. I don't take much stock in social scales. They are never balanced, are they? So I was just as eager as Rob to see what would happen. I had a little honey in

quart Mason jars—not the green ones, of course—all ready and had previously ordered some plain labels. I don't believe it was more than an hour after that sign went up before an auto stopped and a man came up to the door. To be sure, he didn't buy—he wanted comb honey—but he was interested and even went out to look at the hives. The next day another auto stopped at the sign—a Ford this time—and those people took a quart of honey. It's queer, but we seem to sell more to Fords, perhaps because they can stop more easily. We put the 65 cents in a Mason jar, and Mother assured us that we'd never have any more to put in from that source, but we felt elated. If only *one* person a day was halted by the sign and bought one quart of honey we would be getting twenty cents a pound for that much honey instead of seven or eight. There's a big difference between wholesale and retail prices!

Well, do you know that scarcely a day passed after that but some one stopped to buy? and as the warm weather came on, bringing tourists by the score, we could scarcely keep up with the demand. That's why I have so little canning done for this winter. We actually had to buy more honey to sell to our auto trade, which makes Rob sore when he remembers that most of our crop last year was sold at wholesale.

We noticed that machines coming from the east stopped frequently but that those going the other way got too far past before they could slow down, and we usually lost their trade, so Rob put another sign at the west end of the lot, to "catch them coming and going." It's tremendously interesting to watch the machines come flying by—then come to a halt. There's a little conversation, some hesitation, then (particularly if there are children aboard) some one is almost sure to get out and walk up the line of basswoods. Our Mason jar bank was outgrown long ago—on Labor Day we took in \$35. With this weather of course auto traffic is at its lowest ebb, and yet I dare not have less than a half dozen jars ready on the shelf. There are so many calls for comb honey that we will buy some next summer to have on hand. Rob says he can buy that cheaper than he can produce it, but may be that's true of the extracted too, for selling honey is more profitable than producing it.

The nicest part of all is that so many come back for more. Rob has visions of

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some day selling all of his own honey and more besides, from his own doorstep. Wouldn't it be fine if he could? Mother is convinced now that it pays to advertise and has even got over the feeling that "it isn't done by the best families." So we have accomplished more than all the profit by widening her horizon a little.

I forgot to tell you that Rob has promised to take me to the state convention next month — the beekeepers' convention of course. I'll tell you all about it later. I'm curious about it.

Your loving sister,
Mary.



Two Years of It

In 1915 a neighbor gave me two late small swarms. I put them in boxes, but got no honey that season.

The following December I commenced to get ready for the next season. I sent for five ten-frame hives and other supplies, and when they arrived I had a good deal of pleasure in putting them together and painting them. I put on three good coats of white paint, and painted black numbers on the front. I was very proud of them.

I wintered the two colonies without any protection on the south side of a building. One of them came thru all right, but the other starved some time in February. I sent for a three-frame nucleus of three-banded Italians, including a queen, from Texas, which arrived May 11. These I put in one of my new hives; and as the days went by I learned to handle the frames and find the queen.

In the first part of July I caught two stray swarms in hives I had put up in a tree just back of my barn. This made four colonies. I then sent for an Italian queen; and when she arrived I took three frames of sealed brood and placed them in an empty hive, putting this hive on the stand of the colony of bees in a box hive. (This colony had not swarmed.) I introduced my queen and she was accepted. The colony in the box hive that I moved away lost all of its flying bees and was robbed out later in the fall. The queen that I introduced began laying; and about the time all the bees in the hive were Italians I found no brood in the combs except the few cells of drone brood about to hatch. A week or ten days later I examin-

ed the combs again and found quite a patch of larvae and a few cells of sealed brood. I do not know whether the queen quit laying and began again, or what the trouble was.

The three-frame nucleus that I bought in the spring increased rapidly and began to work in the supers August 5. They made 65 sections of honey from starters. There were also 15 sections about full of combs, but containing little honey. I put these over another colony, the bees of which carried the honey down into the brood-chamber, leaving me the 15 bait sections for spring. The nucleus and the express cost about \$5.00, the hive \$3.00. I sold the 65 sections at 12½ cts. each, so the nucleus paid for itself and for the hive the first year, and I have a good strong colony left with a brood-chamber full of honey. When I started with this nucleus there was only one frame that had a full sheet of foundation. The other frames had only starters.

November 19 I put the bees away for winter. On the fronts of the hives I tacked thick paper. Each inner cover had a hole in it, and between this and the outer cover I put a piece of old quilt. I then carried the hives to a strawstack facing southeast. I pulled out enough straw to make a space large enough for the hives, pushed them in, and packed all around them clear to the front with straw.

I weighed all of the hives as I took them away. The ones I bought in the spring weighed 86 pounds, the others 76 and 65 pounds respectively. An empty hive, bottom and cover, weighs about 38 pounds.

I keep the bees about 40 feet from a public road. If any one should be stung would I be liable for damages? Is there any law in this state compelling me to keep the bees a certain distance from the road?

HOWARD C. PFALTZGRAFF.

Dumont, Iowa.

[It is not always safe to judge the amount of stores by weighing hives, combs, bees, and all, for the hives vary in weight as do the combs. Furthermore, the colonies vary in strength. We should say, however, that there are stores enough; for even if there were ten pounds of bees in each hive, and the combs weighed a pound apiece, that would leave nearly twenty pounds in two of the colonies and nearly thirty in the other one. The one weighing in all only 65 pounds might run short before

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spring. This would depend somewhat upon the strength of the colony.

We know of no law in your state compelling you to keep the bees a certain distance from the highway. In some of the states there are laws having such provision, but they are not enforced.—Ed.]



If Langstroth Were Alive

At one of our short courses I met an old beekeeper who attended a gathering of beekeepers for the first time. Being one of the old settlers his struggles and financial difficulties would not allow him to treat himself to a pleasant vacation, for he had to come one hundred and fifty miles. When the course was over he said to me: "It is worth all the time and money I spent coming here to learn how to hive a swarm by putting it on the old stand and moving the parent colony to a new stand to prevent after-swarming." It was a pleasure to look into the smiling face of the old man, and to feel his warm handshake. It was a lesson to me to see and hear him; and, bless his soul, I have learned from him more than he learned from me.

At the same course I also met another man who explained to me how he manages his bees. He increased four colonies to twenty-eight in one spring, and obtained a surplus of 800 pounds of comb honey for the market. From him also I learned a lesson of great value to me. Both men were of the every-day kind of beekeepers as we meet them everywhere, and both lessons were to me worth more than time and money spent at the short course. There is no beekeeper from whom we may not learn something that will be of great benefit to us, no matter how simple and unknown. Field days, short courses, state and county conventions, and fairs, are occasions for a mental treat to any beekeeper who has ears to hear and eyes to see.

But the treat of all treats is the chance to meet the great minds of the beekeeping world—these men whom we know from their book and magazine articles, whose success has been a silent inspiration to the beekeeping fraternity of the land. Now these men, whose names are so familiar at all beekeepers' firesides, do not live in a bunch together, that we might undertake a pilgrimage to their homes. They are scattered over this whole immense continent.

There is no question in my mind, that, given an opportunity to meet these men all at one place, the beekeepers for hundreds of miles around would leave their bees and their shops to go and shake hands with them.

If father Langstroth would come back to life and invite the beekeepers of the land to come and see him and shake hands with him, and hear him lecture on bees and beekeeping, the crowds would travel to his town from all over the Union to enjoy the rare treat.

We have just as great beekeepers living in our midst now as Langstroth has been. They are ready to meet the beekeepers of the land, not once in a lifetime, but once a year. They do not wish them to travel thousands of miles to see them, but they go to them. Year after year they gather in another part of the states. The National Beekeepers' Association is the occasion which brings them together.

It is worth all your time and money to go and see and hear these men. They are going to be there. They enjoy these gatherings, and look upon them as a vacation and a treat.

The National Beekeepers' Association will meet in February at Madison, Wis., with Mr. N. E. France as host. No true beekeeper can afford to miss it. For membership in the National and other information, write to F. Eric Millen, Sec., East Lansing, Michigan.

FRANCIS JAGER.
President N. B. K. A.



Selling Honey in England

In England beekeepers may be roughly divided into two classes—those who raise more honey than they can sell, and those who sell more than they can produce. Happily the former class are rapidly growing less as the increased demand for honey absorbs the season's produce much quicker than it used to do; while the prevalence of disease of itself reduces considerably the honey crop of many districts. Therefore the problem of overproduction at the present time causes little distress among English beekeepers.

There is no denying the fact that people eat more honey than they formerly did. A greater efficiency among bee-appliances, and better methods of harvesting honey,

FROM THE FIELD OF EXPERIENCE

have enabled the apiarist to secure his surplus in its best form, to get it on the market earlier, and present it more attractively to the public.

The number of small beekeepers thruout the country is very large indeed; but the number of bee-farmers or wholesale producers of honey who devote their whole time to the industry might be counted on the fingers of one hand. Upon these large producers devolves the work of supplying the stores and dairies with honey thruout the year. Usually the friends and neighbors of a beekeeper take most of his produce as fast as it is removed from the hives, for it doubtless appeals to them as the pure article.

The most favored packages are round glass jars, either with a screw cap or tied over with white vegetable parchment in 1-lb. and 1/2-lb. sizes. Frequently they are adorned with a tasty label of the beekeepers' association to whom the apiarist belongs, which of itself guarantees the quality of the honey to be good.

In a scanty season honey sells with scarcely any advertising; but when there is a heavy crop, and new outlets are sought for, a certain amount of soliciting is often necessary; and of doing this there are as many effective ways as there are of killing a dog. A few samples distributed to likely buyers; a few concise pamphlets on the healthfulness of honey; an exhibit of comb honey or jars at a flower show or town market, are excellent means of introducing the produce of the hive to good advantage.

In supplying honey for resale by grocers and at stores, one or two special points need to be borne in mind. First, to provide honey of a high uniform quality and good selling color; then to sell it under a brand by which customers, if satisfied, might be able to distinguish it again.

Once the grocer finds a demand for a certain brand of honey he will require a further supply from time to time, and this necessitates keeping a quantity in bulk or ready bottled to meet this need.

Here the small beekeeper is somewhat handicapped; for when his crop is sold he has no more to offer. On the other hand, the larger producer can often purchase from localities where the yield is heavy but demand slight; and this often relieves a surplus in other markets, which, after all, is frequently the root evil of low prices. In England the demand for honey is greater early in the season, when the new season's

produce is placed on the market. As the fruit season comes on it diminishes; but from October onward it is well maintained till the new year.

Honey in 1-lb. screw-top and 1/2-lb. jars is sold wholesale at \$2.50 to \$2.90 per dozen this year, retailing at 1/2 to 1/4; and for 1/2-lb. jars 8 and 8 1/2 pence each, the wholesale rate being \$1.44 or \$1.56 per dozen, depending on quality.

A package coming much into favor is a parchment vessel holding 15 oz. of honey, which, when granulated, is capital for sending to soldiers, as the pots are light and not easily damaged.

All things considered, the outlook both as regards the demand and increased production of honey in England is full of promise; and it needs only the banishment of the Isle of Wight disease to make the pursuit one of the most, if not *the* most, important of our rural industries.

A. H. BOWEN.

Cheltenham, England.



Effective National Advertising

Having given considerable study to advertising, and read a large number of the articles on the subject that have appeared in the pages of GLEANINGS, I have come to the conclusion that we have not been down to bedrock on the essentials of advertising as taught by modern schools devoted to this subject. Summarizing the somewhat long-drawn-out instructions, one is faced with three broad principles upon which success ultimately depends. First in importance we must appeal directly to the personality of the reader; that is, to something that actually concerns either his welfare or his ideal. Such an appeal is not made by the mere words "Eat Honey," of the much-lauded sticker. Second, we must devise an advertisement that will be outside the groove of the usual eye-catching advertisement. Third, we must be brief. As brevity is the soul of wit, so it is of successful advertising.

The sticker, "Eat Honey," has been pushed more than any other in recent years; but while it is good in its way in lieu of nothing at all, it does not contain the first principle of successful advertising. It fully carries out the third, but has little or no claim to the second. Obviously it says either too little or too much.



FROM THE FIELD OF EXPERIENCE



That honey aids digestion does not appeal to the person with the splendid appetite which we wish our consumers to possess. Such an idea suggests that honey is a food for the invalid. We must adopt something stronger, and at the same time, if possible, something actually startling and of definite educational value. If we want the public to sit up and take notice we must adopt something very different from a mere statement which they can believe or not, as they wish. We must tell them, in a way that can not be contradicted, something that they did not know before. In doing this we carry out our second principle—that is, adopting something outside the ordinary groove of advertising.

In honey we have a unparalleled opportunity to make a good display, owing to the ignorance of the public upon a subject of so much fascination as the bees.

Let me suggest that no other thought so appeals to humanity, not even that of wealth or health, as does the thought of long life. Granting that whatever relieves the bodily organs of labor also lengthens one's term of existence, let us put down for a starter the words, "You cannot live as long as you should." Will such an expression answer? Perhaps many will say that it is all right for a start. Well, it is not good! Almost every one who reads such a statement will mentally remark, "Oh! that is some gag about living as old as Methuselah's ghost," and away goes the effect of our advertisement. Suppose we change it to read, "You cannot live long." Here we have our first principle carried out—that is, a direct appeal to the personal welfare of the reader thru a most startling announcement. Any one once roused out of the ordinary casual reception of the usual advertising matter will read further.

What else shall we say to fulfill the two other conditions? The second principle really includes the first—that is, personal appeal plus originality. We must develop originality further, nevertheless; but let us proceed truthfully, for sooner or later the slightest exaggeration defeats its aim. Suppose after saying, "You can not live long," we add the explanation "as you should," in very small type and then go on with a truthful and brief statement, "unless you eat less sugar and more honey." This is brief, but not backed up with any kind of proof. It is too brief. So we add another fact that the reader never knew before and can not contradict. Being a fact, the whole

world must come to recognize it if we tell them sufficiently often. "Honey builds the system up and sugar wears it out." The whole thing should run like this:

"YOU CANNOT LIVE LONG as you should unless you eat less sugar and more honey. Sugar wears the system out. Honey builds it up."

So great has been the effect upon my private trade in this very thinly populated community that I feel warranted in placing this advertisement before the readers of GLEANINGS as a successful adaptation of information I have gleaned. It may be further improved upon, but just now I do not see any way to do it; and until something can be created that is still better I suggest that it be adopted as a sticker or stamp in place of "Eat Honey." Of course it takes more space; but I should like to see this kind of stamp or sticker printed on one or two grades of envelopes with also a neat illustration of an apiary to fill up the left-hand lower corner. If every honey-producer used such envelopes the large number used in a whole year seen by so many persons would be a most effective way of calling the attention of the purchasing public to the fact that honey has a really necessary place in the daily menu. I believe such envelopes could be sold by the large supply houses more cheaply than plain envelopes could be obtained from local printing-houses, provided the bee-keepers recognize the value of such a medium and use the envelopes in really large numbers.

Advertising Jones' or Smith's honey is all right in one's own territory; but what is required for successful results is the everlasting publication of one great fundamental fact, and that can be obtained only by national effort. I therefore suggest the national envelope. H. BARTLETT MILLER.

Kihikihi, N. Z.



Crop All Sold, Anyway

My extracted honey was all sold by the first of November, as was nearly all of my comb honey. I sell in the home market only, and could have sold much more if I had had it. I sell at a higher price than do any of the other producers, either up or down the valley. My honey goes for \$6.00 per 60-lb. can, even in large quantities. The price for small quantities is

FROM THE FIELD OF EXPERIENCE

\$6.50. I sell the comb honey for \$3.25 to \$3.50 in second-hand cases or in no cases at all.

Not far away honey is selling for \$5.40 per 60-lb. can. It is the custom of the beekeeper in question to leave the honey with a garage man to be sold at that price. Another producer near me sells for 8 cts. a pound. I can not see why beekeepers do not hold up the price of honey. I advanced it this year 50 cents per 60-lb. can, and sold out two months earlier than I did last year. Moreover, I had a much larger crop this year than the year before.

When my customers say, "Why, your prices are higher than they were last year," I merely say that everything that I have to buy is higher, and that I must get more for my product. I tell them that the demand is stronger this year, and that the best markets are higher.

I never sold honey any faster than I did this year. I believe I can work up a home trade that will take several cars of honey at a good price, provided other producers do not ruin the market with lower prices. Their honey must be almost identical with mine.

I have had more experience in selling honey than in producing it. I sold honey for my father for years. Since his death,

two years ago, I have been producing honey as well as selling it.

Sedgwick, Col.

C. E. CROWFOOT.

Easy to Make for Winter Feeding

I have been making some bee candy that is so soft and creamy, and so easily made, that I wish again to urge beekeepers to run no risk in case of doubtful colonies. If there is danger that there may not be stores enough it is easy to make the bees safe by placing a pan of this candy over the colony. The recipe appeared on page 158 of the March issue for 1913, but since many may not have this particular number at hand I quote: "To a quart of boiling water add twelve pounds of granulated sugar, a teaspoonful cream of tartar, a pinch of salt. Allow this to simmer ten minutes, then remove from the fire and stir until it begins to thicken, when it is to be poured into molds." I find that eight pounds of sugar makes nine pounds of candy. In this way we can have an absolutely safe winter feed. I have found that care is necessary not to have the fire too hot. The syrup should not be stirred until it is taken from the fire.



A crop of 6400 pounds of honey was produced in one season by these 48 colonies on a plot of ground in Toronto, 15 x 24 feet.

FROM THE FIELD OF EXPERIENCE

SAVING STEPS IN THE APIARY

In looking at various photographs of apiaries in GLEANINGS I have noticed how scattered the hives are in some of them, necessitating many extra steps. The illustration herewith shows Mr. Granger's yard in Toronto, where in 1913 6400 pounds of honey was secured. The plot of ground is about 15 x 24 feet, and is situated just south of a greenhouse. There are 48 colonies in all in six rows, eight colonies to the row, both end rows facing outward. This gives over 2 feet between the backs of the hives and about 3 ft. between the fronts. In theory this may be too close; but in practice it works perfectly, as is evidenced by the good crops of honey. The extracting-room is just beyond the last row of hives out of sight. Very few queens are lost in mating.

W. P. CLARE

North Toronto, Ontario, Canada.

Hatching Queens Electrically

In California there is a great variation of climate, and it is not at all unusual for a very warm day in the early spring or late fall to be followed by a frost at night. Even in midsummer the nights are usually cold. Under certain conditions it is impossible to maintain sufficient heat in a colony of bees for the proper incubation of queen-cells in nursery cages. To overcome these extremes in weather conditions during the very early spring months, and secure an absolutely uniform temperature at all times, I was led to the use of the electric incubator for the hatching of queens. The advantages of the electrically heated incubator over one heated by a lamp are many. The regulator is much more accurate, the temperature not varying a quarter of a degree in months. There is no odor, no lamp to fill or wick to trim, and there is perfect safety.

I have found a temperature of 96½ degrees, with the humidity at 50 to 55, an ideal hatching combination. Without the proper amount of moisture the incubator would not be a success in this climate during the dry season. By wet sponges and pans of water in the machine, or by sprinkling the floor of the room with water, moisture is supplied until the hygrometer registers the proper amount. Of course it is important that the incubator be placed where there is no jar or vibration and also where

there is no draft. A basement is a very good place.

There is a noticeable difference in favor of the incubator when it comes to introducing virgins thus hatched, especially if they are a few hours to several days old—a condition which can not always be avoided during rainy weather. The incubator virgins have acquired no individual colony odor, ways, or spirit, or whatever it is that causes trouble in introducing.

WHY INTRODUCE VIRGINS INSTEAD OF RIPE CELLS

There are several reasons why a virgin queen is to be preferred by the commercial queen-breeder to giving a ripe queen-cell the day before it is due to hatch—the ease of transporting the virgins to the out-apiary or mating stations, the opportunity of inspecting virgins so that none but the perfect may be used, and the saving of one or more days' time in getting virgins into nuclei, for they are simply run in at the top. In case of ripe cells there is always the danger of chilling and jarring; and even when placed with the utmost care in the center of the brood-nest of the mating nucleus, the temperature is seldom sufficient for proper incubation. The result is that a large number fail to hatch at all, and others are a day to three days over time, some having defective wings. Virgins that do not hatch on schedule time are invariably dark, and in every way inferior to queens that have been incubated properly.

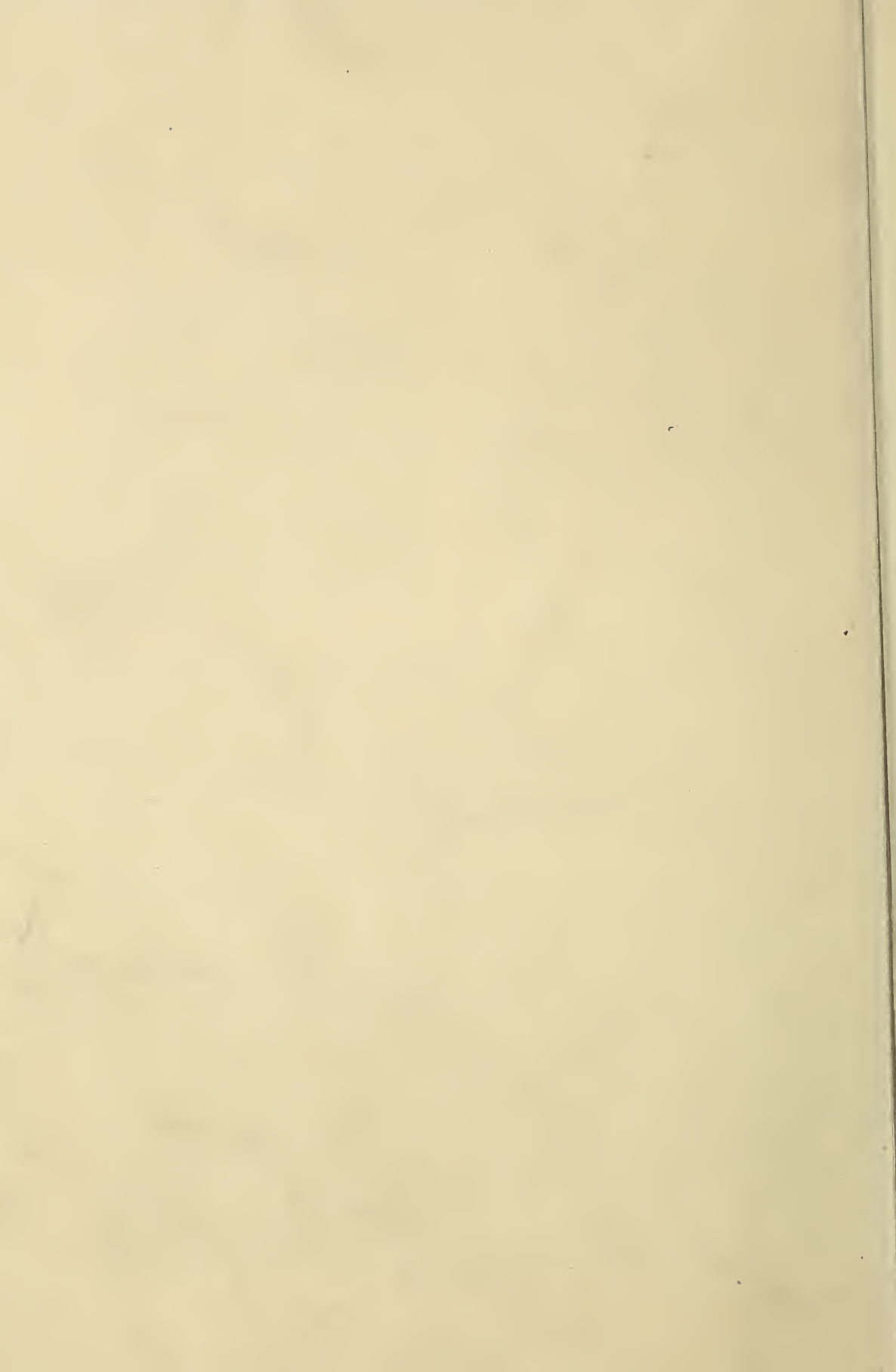
To my mind there is no detail that the specialist can afford to overlook that will tend to bring his product to the very highest standard, and also increase his output; and since we know that an exact and uniform temperature is very important for the highest development of queen-bees I consider the incubator a very desirable adjunct to a modern queen-rearing establishment.

J. E. WING

San Jose, Cal.

Under date of Dec. 1, C. H. Clute, of Sanford, Fla., writes:

Maple is just starting to bloom. I noticed a tree about a week ago and thought it was a freak; but on examination I have found many trees with buds, and with buds just opening. Aster is in full bloom, and the bees in reach of it are on the gain. The bees are in extra-fine condition, and will keep their drones all winter.



THAT age-old question of beemen again—Can queens be successfully reared under cover, and mating controlled? An attempt is now being made to answer that question, finally and for all time, by experimenting under favoring conditions and on a scale never before possible.

The largest glass building in America, a gigantic greenhouse, nearly 600 feet long, 60 feet wide, and 30 feet high at the peak of the roof (the exact location of which the owners at present ask to have remain unpublished) is availed of for this very interesting and most important experiment which is now in the first stages of a try-out. At this time it is impossible to predict the result. We can merely say that the conditions for this trial are the nearest ideal of any yet found. A strong colony has been installed on a platform 15 feet high among the steel supports of the upper center of the huge building (as shown in the small picture at the right of this page) provided with a queen whose tendency has been to lay a very large excess of drone eggs. This colony is one that during the last fall took care of its drones as late as October. The interesting

CAN THIS BE DONE?

The Most Remarkable Experiment in Queen-Rearing Under Cover Ever Tried

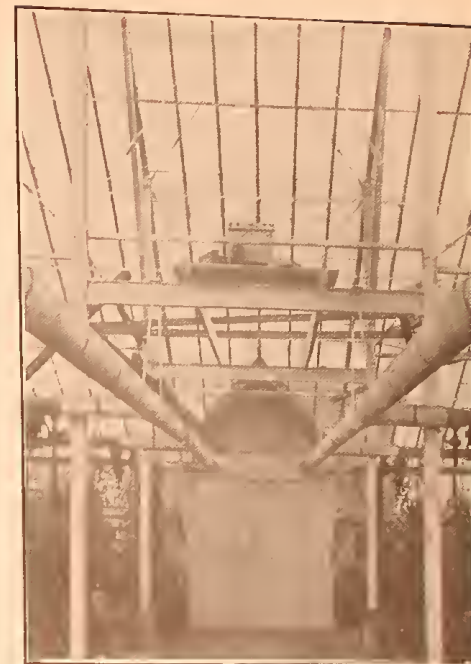
By the Editors

tions right enough for indoor queen-rearing.

It is needless to say that no-queen breeder could afford to erect a \$50,000 building such as is the great greenhouse where this experiment is being tried. The picture at the foot of this page (only part of which could be got within the camera's field) gives some idea of its size. On the next page will be found a picture of the interior of the greenhouse, but which shows a view only from the center to one end of the building and along only one of the six track paths beneath its roof. The small picture on the left of this page shows a part of the apiary attached to this greenhouse business and which has an important function to perform in pollinating the plants raised there. As before noted, the smaller picture on the right of this page shows the location of the colony on a platform 15 feet above the floor of the greenhouse, which is expected to furnish the drones that will (perhaps) mate with the virgins.

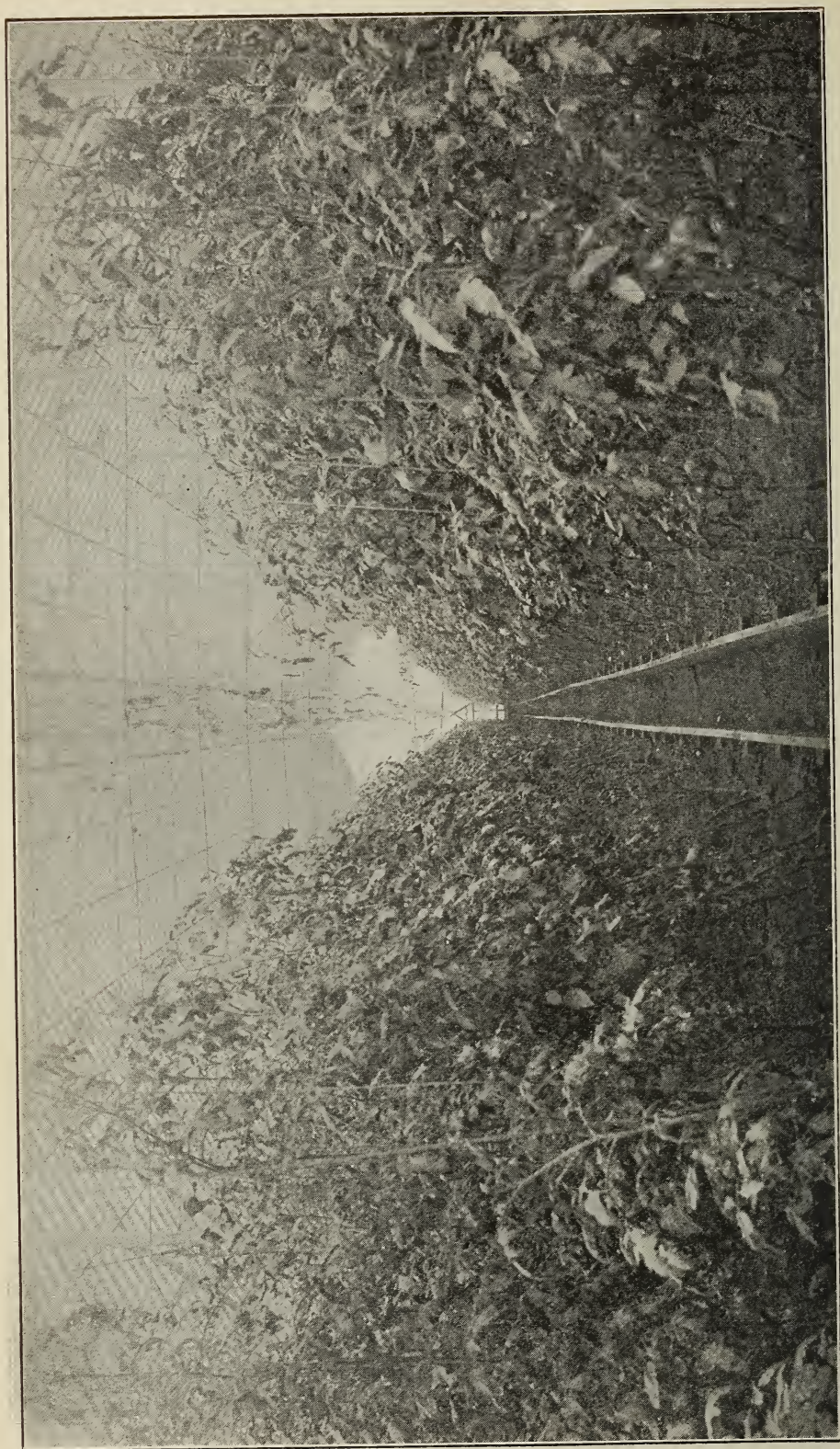


The greenhouse apiary



The experimental hive





A half-length view within the great greenhouse where the experiment of mating queens in confinement is now under way.

THIS, as its name indicates, is to be a department particularly for those to whom beekeeping is a sideline, be they enthusiastic be-

ginners or discouraged ready-to-quitthers, bee-lovers too busy about other things to have more than two or three hives under an apple tree to provide honey and delight of their presence, or skillful honey-producers who, unattracted by the thought of beekeeping as a means of livelihood, choose to limit their efforts to forty or fifty colonies in their own yards. Our interests will not be those of outyards and trucks and crews of helpers and carloads of honey and all the varied and distinct problems that these big efforts bring about, but they will be vital and absorbing to us, and we shall discuss them one by one.

* * *

Right now is the best season of the year for study, and there is a wealth of literature to choose from, books and journals and bulletins. Once the habit is formed, it keeps going of itself. The more you read, the more you know; the more you know, the more you want to know; the more you want to know, the more you read. So there you are, reading again. And in what good company!—doctors, ministers, lawyers, grocers, iron-workers, carpenters, farmers, teachers; always, everywhere, the successful ones are those who study most carefully and thoroly, and work most persistently and intelligently. Notice what Prof. Jager says, page 1067; "Beekeeping is a science, and a very deep and complicated one at that. Knowledge

Beekeeping as a Side Line

Grace Allen

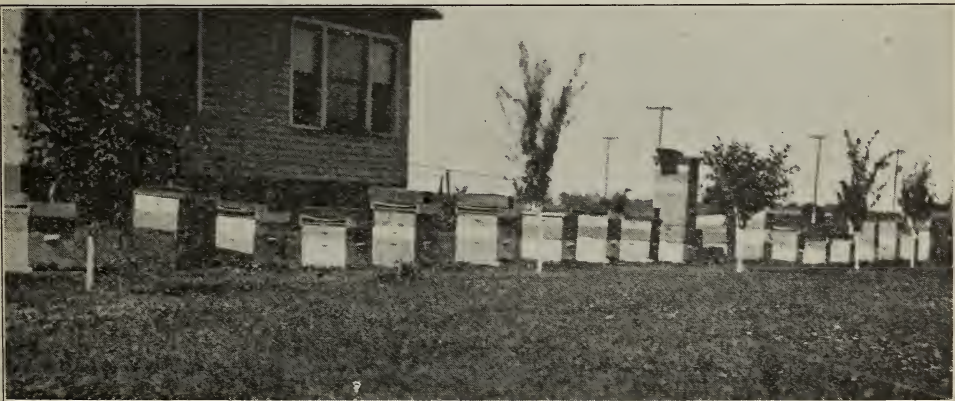
is power. It is also success and wealth."

In Champaign, Illinois, there lives a railroad man, a freight conductor named G. B.

Mays. For fifteen years Mr. Mays has been keeping bees as a sideline; and, as he has a gentle strain of Italians, he has no trouble with his neighbors. The picture shows his little yard during the honey-flow; at that time, Mr. Mays had twenty colonies and took off eleven hundred pounds of white-clover honey, but he has since increased to forty colonies. He is able to furnish honey to all the agents on his division. Mr. Mays is a reader and a constant student of bee books and journals, and therein probably lies the secret of his continued endeavor and success.

* * *

Another thing to be looked after in winter is the question of new supplies. And in its own way that is as much fun as working with the bees themselves. Don't, I pray you, wait till the last possible minute to order your hives, and then till another last possible minute to put them together. Decide early in the winter (if you did not in the fall) what you will need for next season, and, having decided, order; and having purchased, put together; for, of course, tho you be the veriest beginner, you are going to tackle that job yourself. I have heard of people who sent for the bee-supply agent or the state inspector to help work out the Chinese puzzle of hives and frames "in the flat." It is undeniably puzzling the first time, unless



The apiary from which a railroad man furnishes honey to the agents on his division.



"Close to his garden, close to his house, close to his neighbors."

you are a cabinet-maker or a genius. But that's part of the fun—something new to work out and master. Don't wail that you never can put all that kindling together. Read the directions—they are absolutely clear, and, together with the illustrations, will surely enable you to work it out. Those who have never yet done it have many a delightful evening ahead.

Mr. Geo. J. Trostle, of Sibley, Iowa, is a typical backlot beekeeper, tho he also has some bees out of town. See his row of hives, close to his garden, close to his house, close to his neighbors. Yet he has been fortunate in having his bees make no trouble. Sometimes the bee-neighbor problem has had to be worked out with some care, and we shall touch on that further in this department. Here is an interesting bit from Mr. Trostle's letter.

The pictures you will find inclosed are of myself and bees. The swarm is a second one of three-banded Italians. The row of hives are in my back yard. You can see by the picture how close they are to the garden. I live in town on one lot, with neighbors on all sides, but have had no trouble on account of the bees.

I have also some bees out of town. They will average about 80 to 100 lbs. per colony.

I have a glass hive with bees in, which I loaned to a grocer in town to use as an advertisement. He screened in his front window, covered the bottom with white-clover sod, and the sides with flowers. Then we placed the hive on the sod with the glass

side to the street and let the bees out in the inclosed window. I lost a great many bees, but was willing to do what I could to advertise honey. The grocer said it greatly increased his sale of honey.

Sibley, Iowa.

Geo. J. Trostle.

That hive record of Mr. C. E. Fowler's, shown and explained on page 1071, is certainly ingenious and seemingly complete in its condensation. Many of the ideas are certainly either adoptable or adaptable. But it does look complicated and confusing. I know I should prefer initials or abbreviations to arbitrary numerals. For "eggs" why not "e" instead of "1"? "Larvæ," "capped larvae," "hatching larvae," could be "l," "cl," "hl," respectively. In one place on the record "2" means "larvæ;" in other places it signifies two pounds of bees or two frames of either brood or honey, and in another place it refers to the first super, the second part of the hive, all of which seems like working the numerals overtime, making them act as arbitrary signs for certain words and phrases in addition to their own legitimate work of designating number. In some ways this record appeals to me strongly, and, with some changes to suit my personal preferences, it will probably inaugurate a change in my own records, which to date have possessed that particular virtue of generous detail especially possible to the backlotter with his smaller number of hives.

PLAN to go to the National convention at Madison. It's worth going to see and hear the genial president, Prof. Jager.

"MORE probably those who buy karo cannot afford to buy honey," p. 1106. Likely enough they think they cannot afford it. If, however, the poorest day-laborer were fully informed as to the *real food value* of honey, and its superiority over karo, he might think he could better afford honey than karo.

"THE RIPER the honey the less it will granulate," says P. C. Chadwick, p. 1112. Can you prove that, P. C.? I've always leaned to that belief, but never was entirely sure. [It has been generally believed that unripe honey will granulate quicker than ripe. We did not know there was any doubt on that point.—Ed.]

R. F. HOLTERMANN, p. 1077, thinks that so far as lies in our power we should not let worker-bees have the chance to clean out larvæ diseased with European foul brood. I risk the guess that, after our tall friend has had a little longer acquaintance with the disease, he'll change his mind. I'd hardly think of having anything else done with the diseased larvæ.

M. S. PHILLIPPE writes: "Here is a remedy for those bothersome toads G. W. H. mentions, p. 1040. If the yard is so situated, he can dig a trench the width of a shovel and 20 to 24 inches deep around the apiary, and for a large apiary he can plow a deep furrow and finish to right depth with shovel." He says it works with Imperial Valley toads, two of which will fill a hat.

A REMARKABLE thing in U. S. Government report is 32.3 per cent of this year's honey crop being held for home use and local sale against 60.8 per cent last year, and 67.7 per cent sold to outside markets this year against 39.2 per cent last year. If no mistake in figures, that looks like progress in the wrong direction. [There must be some mistake. Our own investigations show that more honey was consumed in the United States this year than ever before in its history.—Ed.]

SOME reasons are given, p. 1111, why brood disappears in the fall, and combs become solid slabs of honey. May be all right, but it looks a good deal to me as

STRAY STRAWS

Dr. C. C. Miller

if by a gracious provision of nature my bees decide at a certain time that it's time brood must give way to preparation for winter. To

be sure, with extracting-combs they don't act quite the same as with sections; but in that case I suppose they don't figure on having the extracting-comb taken away.

D. D. WHEDON, if you want a mill like mine write Quaker City Mill, Philadelphia, Pa., and ask price of mill F No. 4 (I think it's around \$4.00). Use any good wheat, being sure it is dry. I find it easier to run merely enough so no grains go thru whole, and then running it thru fine. The flour doesn't keep well if ground many days ahead. The mill will grind any grain.

MARTEN MULDER writes from South Africa that a special contributor to *The Farmer's Weekly* advises to "divide the apiary into halves, the one half the strong hives and the other half the weak ones. Take all the brood from the weak hives and give it to the strong hives, when the harvest will be at least 50 to 100 per cent more." He quotes my book, and says this is called the "American Doubling-up System," and is universally practiced in America.

He's badly mixed, Marten. I strengthen first the strongest of those weak enough to need help, and, if necessary for that purpose, might draw brood from the weakest; but if I did I'd pay it back afterward with double interest, and bring *all* colonies up to full strength for the harvest.

MENTION was made, p. 1013, Nov. 1, of the plan of M. S. Phillippe to test the presence of a virgin by pinning a sealed queen-cell on sealed brood in the brood-nest, when if any kind of queen is present the cell will be destroyed in a few hours. The editor said, "Yes; but if one doesn't have a sealed queen-cell, what is he to do?" Well, there are always sealed cells to burn during the swarming season, and Mr. Phillippe says you can save these for future use, since "old cells are as good as new if kept unbroken." Likely enough the editor had in mind that a live occupant was needed in the cell; and a beekeeper at my elbow says, "A queen wouldn't tear a cell with a dead tenant." Don't be too sure of that. With a sealed queen-cell in a nursery I've often known the queen to dig holes in the side of the empty cell after emerging from it.

NORTH Carolina has
Mr. Geo.

H. Rea as bee-keeping specialist, and now Tennessee has Mr. C. E. Bartholomew, formerly connected with the state experiment work of Iowa.

Mr. Bartholomew's appointment is a co-operative arrangement between the United States Department of Agriculture, the State Department of Agriculture, and the University of Tennessee. His headquarters are at Knoxville, and he has already started on his work of education. He has been up in the mountain districts of Sevier and Sullivan counties in East Tennessee, looking over the situation, which he reports as needing to be looked over. It seems that the farmer beekeepers all over the state have been growing constantly fewer and fewer, and the total number of colonies in Tennessee is reported to have dwindled from 225,000 in 1900 to about half that many at the present time.

In our first interview Mr. Bartholomew surprised me with the statement that from such observations as he had made so far, he had decided that there weren't so many box-beekeepers in this state after all. I expressed my loyal delight, whereupon Mr. Bartholomew smiled and explained. "You see," he said, "most of the bees in the box hives have died out." So it seems his first work in the remote sections will be to induce the ex-beekeepers to get rid of the empty old boxes and "gums," and then to stock up with real bees in real hives.

At Nashville last week, Mr. Bartholomew addressed the Homemakers' Department of the Farmers' Institute, giving interesting information regarding the really great possibilities of beekeeping in Tennessee. This was followed with an address at Huntington, and on Saturday, Dec. 16, he will speak at Franklin before a gathering of farmers and beekeepers.

It is going to mean something for Tennessee to have Mr. Bartholomew here, and we are going to help it mean the most possible. We want to see the mountain beekeepers and those in remote districts enlightened, and we know the progressive beekeepers will keep constantly advancing, so as to be always in the fore front of modern apiculture. So we shall all be interested and open-minded, even tho Mr. Bartholomew does start right off, the first thing, on the subject of winter packing

THE DIXIE BEE

Grace Allen

for that's what he's doing! At least, it is one of the things he is doing.

As soon as he got here, he went to studying weather reports,

and he tells me that we have had as great daily variation as 45 degrees, and that during the winter months, as often as once every week comes a day with a variation of 25 degrees. Wherefore, reasons Mr. Bartholomew, there is no state where winter packing is more needed than in Tennessee! Well, it shall be our pride that we are open to conviction and education. We have been honest in thinking we didn't need special winter protection; some of us because we had been successful for thirty or forty years without packing; some of us because we had tried it and decided it didn't pay; and most of us because we had infinite faith in these others.

Knowing that Mr. E. G. Carr had seriously advocated winter cases for North Carolina, I wrote Mr. Bruce Anderson, of Forsyth County, asking about the results of winter packing there. He writes that very few colonies in his county were so packed last fall, and that equally strong colonies without packing stored as much surplus as those packed, but that last winter was very mild, and anyway "one season's experience is not sufficient to draw conclusions from." And that is true. So all the keepers of Dixie bees are going to be open-minded toward this winter-packing problem, consider it from all sides, and give it a fair trial, for we assuredly are not going to stand in our own light.

Mr. Bartholomew is an intelligent, up-to-date man, well informed and of practical experience. He seems in earnest about this work in Tennessee and evidently intends to give it his best efforts. He especially urges strong, active, local organizations, with frequent meetings and demonstrations. Surely, as Dr. Phillips says, work and co-operation will bring results.

Mr. Doolittle's figures on consumption of winter stores are interesting, and almost startling. We whose bees are in a mild climate, without packing, seem compelled to face the fact that they do consume a greater quantity of honey during the winter months than do those in the North where they are confined so much more steadily to the hive, particularly, of course, in the case of cellar-wintering.

THE weather to date, Dec. 16, has been fairly cold with an absence of high winds. About the middle of November we had a cold snap, and on one day the thermometer reached zero for a few hours. Then the weather moderated until a few days ago, and at the time of this writing we have had a few degrees zero on two mornings this week.

Bees had a partial flight one day late in November, and on Dec. 8 they again flew a little. Probably they will not have another flight till some time late in March. The stores in the hives are plentiful and appear to be of good quality, but the clusters are about the smallest on the average that we have ever experienced. For the next four months bees here in Ontario that are wintering outside are better off if let severely alone, as nothing can be done now to make up for any neglect earlier in the season. While the beekeepers are resting up for another year's labor, may the thousands and thousands of colonies of bees also resting come thru in real good shape and again provide work, and a living as well, to their many masters.

The Ontario convention is again a thing of the past. Space forbids me making more than a passing mention of the meeting. The attendance was good, but that is what we always expect and generally obtain at our meetings. Visitors from "over the line" included such well-known men as E. R. Root, C. P. Dadant, W. D. Achord, of Alabama, the well-known shipper of bees, and David Running, former president of the Michigan Association. O. L. Hershiser, of Buffalo, was with us of course; but then he is more a Canadian than anything else—at least his better half will qualify in that way, even if he himself qualifies as an American citizen. Reports from the members universally showed that a good crop had been harvested; but close inquiry failed to disclose any large amounts of honey still in hands of the beekeepers. Prospects for the province are not nearly as good as last year, in so far as next season's crop is concerned, altho many sections say that clover is fair.

The sessions were all well attended, and the discussions were featured with more than the usual amount of levity. Possibly

NOTES FROM CANADA

J. L. Byer

the feature that was out of the ordinary as compared with meetings ten or more years ago was the time and interest taken up with ques-

tions concerning transportation with autos, auto trucks, etc. Judging by what one would see at the convention in this line, surely there are a lot of beekeepers in Ontario operating machines just now.

The officers elected for 1917 are the same as for 1916, and there are only a few changes in the directorate. While this meeting, in common with others like it, certainly is a source of information and benefit to all concerned, the writer was impressed with the thought expressed by so many that it is worth while attending such meetings for the social side, even if everything else were left out. We are inclined to agree with this idea; for any man left to himself, with no chance of interchanging ideas with others, will become self-centered and narrow. Meeting with others from all over the country from time to time is one of the best antidotes I know of to help overcome these infirmities.

Interesting reading to me is that report of the Illinois convention, page 1120, Dec. 1. Like the Dadants we use many large hives—even larger than their "barn." But when the statement is made that the ten-frame Quinby is large enough to keep most queens going, so that no excluder is necessary, then I dissent. Talking with Mr. Dadant at Toronto I came to the conclusion that it was a question of size of super that made the difference. They, the Dadants, use no excluders on their large hives, and practically no queens go above. I use a lot of still larger hives; and with no excluder 90 per cent or more of the queens go above. They use shallow supers, while I use deep supers—that must be the explanation. How easy to question another fellow's management and results, and then, after all, not be fully informed as to all details! I use 1½-inch spacing, and want nothing closer; but honestly I had never thought of this as being a help to prevent swarming. As we usually have but little swarming, I accept friend Latham's ideas on the subject, with pleasure. Convenience in handling frames, and better results in wintering, have been my only arguments in favor of the wider spacing; but now we have another "talking-point."

ONE hundred earl o a d s of bottled honey already, Dec. 1, 1916—see page 1106. This may account for the length of time we have had to wait to get orders filled for glass.



Beekeepers' Review, were 10½ lbs. per colony for the cellar, and 17½ for those wintered outdoors. The article for the *Review* was

written before I saw Mr. Doolittle's page in the Nov. 15th issue of *GLEANINGS*.

While government reports show a larger crop of honey in 1916 than in the previous year, the sale of both comb and extracted honey, with us, has been better than in 1915.

We waited till Dec. 1 for the bees to get a late flight, and then had to cellar them without a fly. One hundred went in Dec. 1, and 30 more a week later. But I never knew bees to be as quiet as they are now.

Wesley Foster tells us, page 1014, Nov. 1, that cities in the middle West are taking honey in earlots, tho the population is not over 15,000. If all the population of the country were to take honey that way, how much would it take to supply the demand?

"In my opinion," says P. C. Chadwick, page 1112, Dec. 1, "a man cannot afford to feed bees, even at a difference in price of five cents per pound in favor of sugar." Well, now, that seems to be putting it pretty strong; but who can say he is not right?

"When a beekeeper loses hope it is equivalent to an apiary for sale, or the beginning of a rundown yard that no one would pay much for," says P. C. Chadwick, page 967, Oct. 15. Well, isn't it the beginning of the end in any kind of business?

Prof. Francis Jager, page 1067, Nov. 15, gives a sad commentary on beekeeping in the United States when he tells us that only one beekeeper in eight is familiar with the literature of beekeeping in this country. The truth of his statement can be vouched for by a number of inspectors.

Mr. Doolittle's experiments in finding the amount of honey indoors and outside are almost exactly the same as our own. My own figures, as I remember them, given in the December number of *The*

From page 1013, Nov. 1, I gather that Dr. Miller is still in trouble getting out frames or dummies. Say, doctor, why don't you use free hanging frames, just as Langstroth made them? It is my experience that it is not half the work to get out the first one that it is a Hoffman or Danzenbaker frame.

On page 1010, Nov. 1, attention is called to the value of early packing for bees left on their summer stands. Now I have to confess that we usually have so much to do in early autumn that we often leave our packing till rather late, and often find bunches of dead bees where they have become separated from the main cluster by a sudden change of temperature.

Mr. Holtermann's article, page 1076, Nov. 15, as to ways in which we may find out how European foul brood spreads, is well worth our attention. It is not probable any one beekeeper may be so situated as to be able to try them all; but one person may be able to try out one way and another another, and slowly we may learn much that is new.

A. C. Miller thinks I must be a rather slim beekeeper because I feed so much sugar, or at least he hints that way. See page 932, Oct. 1, and then he admits he has had to feed heavily some years when there was little late honey. Well, I will admit that I am not as good at beekeeping as I ought to be; but will our friend tell us what one is to do when there is little honey to be gathered after July 20? I have thought of running one or more, or a part of several yards for getting brood-combs filled solid with honey for giving to those run for section honey. Who can tell if it will pay better than running all for section honey and then feeding sugar for winter stores?

DURING

November
17½ inches
of snow fell here
in Boulder, and
much more than
that on the
Front Range,
thirty miles to
the west and two miles up. The early
snow is well packed; and as our soil is in
excellent condition we cannot yet complain
of prospects for next year.

Extracted honey has shown a good demand, and the prosperity of the farmers is quite a factor in this, here in the West. The farmers are getting the habit of buying in 60-lb. cans; and hundreds if not thousands of cans are sold in Colorado this way each year.

The writer has had a traveling man on the road, selling honey since the first of September. He is traveling in a Ford, and so far has made about five thousand miles. He has had some experiences selling honey in five states. Selling honey only, with no side line, takes pushing to make it go, especially when so many are underselling.

WHERE THE MONEY GOES.

The beekeepers go for the retailer and commission man, and see the great difference between what the producer gets and what the consumer pays, failing to see where all the expense comes in. Here are a few items to show where the money goes. We will call it the cost from the producer to retailer and will leave out the middleman this time. Using 60 lbs. of honey as a basis we will put it up in 5-lb. pails for the trade.

60 lbs. extracted honey at 7 cts.....	\$4.20
Melting and heating honey.....	.03
12 5-lb. friction-top pails at 6 cts...	.72
Labels for pails.....	.03
Box for shipping pails.....	.16
Shipping honey to retailer.....	.40
Cost of selling to retail trade 15 per cent	1.20
Loss in accounts, 2 per cent.....	.16
Average loss in leakage.....	.02
Cost of charging, billing, and col- lecting15
	<hr/>
	\$7.07
Selling price to retailer, \$8.00.....	\$8.00
	<hr/>
	7.07
	<hr/>
	\$.93

This leaves 93 cents for interest on money and all work in preparing honey and shipping. The beekeeper has, of course, the



can left, which is worth something. Some are selling to retailers for less than \$8.00 per dozen and some for more. When the retailer pays

\$8.00 a dozen he sells the 5-lb. pails for 90 cents to a dollar each. Then he charges the account, and may be he gets his money and may be doesn't.

Now, this picture is not very encouraging for either the beekeeper or the retailer; but let us see how the beekeeper can get more for his honey and the consumer pay less.

We will take 60 lbs. of honey and price it at \$6.00 a can boxed ready for shipment by express or freight. We cultivate the farmer trade, because the farmer trade comes back year after year better than does the grocery trade. The farmer always pays cash and he pays the freight. The cost of selling to farmers is from five to ten per cent, or an average of 7½ per cent, which is, say, 45 cents a can, leaving \$5.55 net for 60 lbs. of honey to the producer, and the honey costs the farmer \$6.75 if he buys one can, and about \$6.40 per can if he buys two cans. The producer gets 9 cents a pound net, and better for his extracted honey, and the consumer gets his honey for 10⅔ cts. to 11⅓ cts. per pound instead of 15 or 16 cents a pound in 5-lb. pails. Such a mail-order trade is slow building up, but when built it stays if your honey is right.

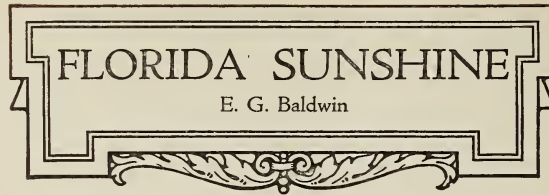
D. C. Polhemus, of Lamar, Colorado, operates about 2000 colonies of bees, and already this year has bought three cars of extracted and about a car of comb honey for his trade. This shows what may be done in building up a honey trade in a section of country not three hundred miles long by perhaps one hundred and fifty wide. The population will not exceed half a million, and he has competition too.

Some of us are fixed for quickly changing from comb to extracted honey production, but more of us are not. Can the beekeeper afford to change from one to the other as the markets fluctuate? Last year extracted honey sold for 3½ to 5 cts. a pound all over the West. This year the extracted-honey man has his inning, while the comb-honey producer is holding his crop. Where is the wisest counsel? What is a man to do when Christmas comes and all of his crop is still on his hands and no buyers? The man who criticises him for selling low gets the first brick.

SEVERAL beemen on the East Coast report over one super of honey per colony from basswood. Sit up and take notice, you apiarists of Wisconsin, Michigan, Ohio, and the linden regions generally! With all our other honeys we here in Florida can boast of supers of linden. What next?

A splendid sample of honey, a new sort, was sent me the other day from Key Biscayne, on East Coast. It came from the Hacienda apiaries, owned by Mr. Mathewson, a progressive orange-grower and bee-man of no little note. The source of this honey is the cocoanut palm. Never before have I *seen* or sampled this honey. It is amber in hue, with a peculiar metallic glint—rather odd when viewed in a strong light. The flavor? Well, I gave samples to taste to many of my friends—some beemen, others not. All, with little hesitation, pronounced it hoarhound. And such is, indeed, the flavor—the after-taste more than at first. The body is thick, and all together it is a good honey, even for table use. Mr. Mathewson reports that the cocoanut palm is practically his only source of surplus; therefore we can be reasonably certain that this is a pure honey, true to name and source.

We have referred before to the Mexican or pinkvine (*Antigonon leptopus*) (see p. 970, Oct. 15, 1916). While it is an exotic, it grows wild if left to itself—that is, it will take care of itself after once being planted. Its long flowering clusters, racemes of pink blossoms, are a delight to the eye and to the bees that swarm on it from May to frost. We have always looked upon this plant as more of an ornament than a real asset to the surplus of the apiarist. But after several letters exchanged with a correspondent in Tampa, Fla., we received a large sample of honey from him which he asserts is from the pinkvine. His contention is that Tampa is full of this vine. That we know to be true; secondly, that it is about the only thing in bloom there for a month or two in midsummer; third, that he found his bees swarming on it all day long when he could trace them to no other source whatsoever. All this sounds plausible and reasonable. He declares, too, that he secured over one super of honey from one colony, that came entirely



from this source, and it is from that super he sent us the sample referred to. Admittedly the honey received is all of one sort—that is, dis-

tinct in flavor, color, and body, and does not appear like a mixture. One who is acquainted with the distinct aster honey of eastern Kentucky would pronounce it at once aster. It is strikingly like that in color, body, and flavor—the latter most of all. We are interested to note that the special agent in charge of the agricultural experiment station, island of Guam, annual report for 1913, page 21, says, "Since the first colony of bees was obtained by this station in October, 1911, observations were made of some of the flowers from which honey was being collected. The cocoanut palm is one of the principal honey-producing plants of the island. Under favorable conditions this palm flowers almost continuously; and during the dry season, when few other honey-producing plants are in bloom, it furnishes practically all the honey furnished by the bees. The 'cadena de amor,' or chain-of-love vine (*Antigonon leptopus*), a beautiful flowering vine, is a fine honey-plant. Next spring when the vines come into flower again here we plan to make microscopical examination of pollen grains and compare them with those in this sample. We can then be sure whether or not the sample is mainly from the pinkvine. It is also called "rosa-de-montana."

Strangest of all comes the statement from a beekeeper of nearly 100 colonies on the St. John's River, to the effect that the spruce pine (*Pinus glabra*) yields not only pollen but also honey, and in large quantities! We were ready to believe that even dog-fennel would give honey if we had to admit that the spruce pine was a honey-yielder; but our informant, Mr. Shuman, asserts, with good show of proof, that his bees gathered most of his surplus after the orange flow, the past summer, from this source. Truly we know not much about the flora of our own state as yet! It is not from the blossom, which is inconspicuous and short-lived, but from the bases of the leaves—the petioles or needles—that the bees gather their sweets. Mr. Shuman examined the trees, and found the bees swarming, humming as in summer, about the needles at the points where they join the branch. The honey is fair.

COMB honey, like other frail commodities, should be looked at with eyes and *not* with the fingers.

Extracting cold honey is not conducive to good morals.

Extracting too closely is worse than disease. Both together are forerunners of disaster.

Inyo County, along Owens River, produces comb honey that is not surpassed for color anywhere in the United States.

Doubling up weak colonies is like thinning fruit—it looks like a waste at the time, but gives more for the market.

Raising the average yield per colony should begin by raising the average condition before the honey-flow begins.

A fixed rule of management is not as applicable in this state as in the prairie states of the East. Here elevation is often of as much importance as any other consideration.

The inland foothill districts have an advantage over the coast district in that many of the coast fogs do not reach inland. The nights, however, get much colder from a lack of the ocean influence.

There is, perhaps, as great a variety of hives in California as anywhere in the Union. Standard hives will eventually be adopted almost exclusively, however, as the tendency is in that direction.

There is a crop of young beekeepers springing up here that remind me of the mushrooms in my father's old orchard after a warm spring rain. Some of them, I fear, are none too far advanced in the art to make the highest success possible.

My youngest son went out to sell some bulk comb honey. Later one of the neighbors to whom he had sold called up and wanted to know what that comb was in it for. He was used to extracted honey, and could see only useless bulk in the comb. I guess he was right too.

IN CALIFORNIA

P. C. Chadwick

Rain visited almost the entire state on December 1 and 2, aiding vegetation greatly. The amount ranged from more than two inches at

Santa Barbara to only a light fall in Redlands. The fall here reached only thirteen-hundredths of an inch, which was too small for any great value. It was the lightest here of any place reported, however.

There are some fine sage ranges along the coast in Monterey County that are said to be of little value on account of the heavy fog during the blooming season. I have it on good authority that two seasons ago bees were actually starving during the heavy blooming period of this plant on account of fog and bad weather.

The wealth of the California wild flowers cannot be imagined by one who has not seen them in their fullest glory. On a small space of soil may be found not only countless numbers, but almost countless varieties—not in a great entwined mass, but small plants, some of which are less than three inches high.

Perhaps the earliest springtime in California comes in the Coachella Valley. Bees begin work there early in January, on the cottonwood, and continue thruout the season. This valley is mostly far below the level of the sea. A paper published there known as the *Coachella Valley Submarine*, boasts of being the "lowest-down paper on earth."

Before the late John Muir died he was deploring the fact that automobiles were the means for careless persons to reach the great natural wild flower beds of the state. Instead of going out to pick or cut the bloom many were pulled up by the roots, thus destroying the future flowers. No greater lover of the wild flowers ever lived than Mr. Muir.

Eliminating old bees from queen-mating colonies is more important than may be suspected. The continual removing of mated queens before they have a chance to restock the colony allows the bees to reach an age not conducive to successful queen work. These old workers have cared for

brood once, and have become rather averse to any condition that will force them into the business again. And a young step-mother does not seem to appeal to them very strongly either.

A correspondent says: "High noon on a hot day is the best time to examine a cross colony of bees." The best time for me to examine them is when I get *good and ready*. With a smoke, gloves, and veil I defy any colony to put me off until high noon. If a man does not protect himself from unnecessary stings he ought to be stung.

Wesley Foster, it is safe to spread brood here when the circle of bees extends out beyond the combs containing brood. This condition is not likely to happen unless the brood-chamber is inclined to be honey-bound. Spreading brood is a fine help at times; but I believe more harm is done by injudicious spreading than there is done thru knowledge of the art.

We shall have to take off our hats to Texas. They produce a big crop of bulk comb honey and sell most of it at home. That is more than California does; yet buyers often tell me that Texas is going to have an enormous crop. It does not worry me, however, any more, for I know that Texas is an empire within itself, largely consuming its own honey. The buyers cannot "get by" that.

Recently I noticed that the filaree by the roadside was dried up, except in one place where the initials of a person remained in green. A child had stopped to mark its initials in the dust, and the seed of the filaree had been covered a little deeper by this means. It had sprouted quickly, and was able to get rooted to a depth that gave it a little better chance to grow, and reach a little deeper for moisture.

Within our state we have both the garret and the cellar of our country. One may stand on the top of snow-capped Mt. Whitney, 14,500 ft. high, in July, and look down on the burning sands of Death Valley, nearly 300 ft. below the level of the sea. The contrast in temperature is great, as 140 degrees F. is not uncommon in Death Valley. All the variations of temperature are to be found between these two extremes.

Every once in a while I find a colony that is crosser than others, and some way they seem to get the honey in greater quantities than many of their more even-tempered neighbors. The reason is simple enough. They are active, alert, always looking out for something, even if it be nothing more than trouble. So this activity stands them "in good" when there is something doing among the flowers. Not all of the hustlers have bad tempers, however.

Mr. Harry Crawford, of Bloomfield, Colo., and Long Beach, Cal., called on me for a few hours recently. Harry has a nice home in Long Beach as well as a California bungalow at Bloomfield. He comes each winter to his Long Beach home to escape the cold. He is a successful comb-honey producer, having made an average of 110 pounds per colony on his Bloomfield locations this season. Real comb-honey producers are not very common in these parts, and it did me good to talk over that part of the business with him.

Mr. M. H. Mendleson, of Ventura, allows no handling of comb honey after sundown. Everything pertaining to it must be put away from any possibility of a moth reaching it after that time. He never fumigates, and never has any trouble with moth. There is not a man in the state who can command the price for good comb honey that he can. His reputation is established on merit of this kind. A few fancy grocers of Los Angeles are always ready to take his crop at top-notch prices, or a little more if he asks it.

The following correction slip accompanied the last Government crop report.

HONEY PRODUCTION 1916 AND 1915.

"The number of colonies at the spring count this year was estimated to be 2.8 per cent greater than shown by the spring count in 1915; which with the yields above shown indicate a total crop of honey 28.3 per cent greater than the crop of 1915.

"The reports indicate that the proportion of the present crop that is comb honey is 40.3 per cent, against 40 per cent last year. Extracted this year, 39.5 per cent, against 41.3, and bulk honey 20.2 per cent against 18.1 per cent last year. Of the total crop, 67.7 per cent is being held for home use and local sale, and 32.3 per cent as being sold to outside markets; the percentage last year was 60.8 per cent used locally, and 39.2 per cent sold to outside market."

THE conditions in Texas are different from those in most of the other states in the Union.

Let us take, for instance, the honey crop for 1916. For at least three weeks it was a serious question as to whether or not the Texas beekeepers in general would get any surplus honey. Then suddenly the mesquite came into full bloom with an abundant yield, but with very little catclaw to be seen. This was due to the fact that mesquite requires very dry warm weather to yield nectar, while the catclaw is much like what is known as whitebrush, which requires frequent rains. The state being variably controlled by weather conditions, as a whole the year 1916 was the best for beekeepers in, possibly, 25 years. The yield was good, the quality excellent, the market demand brisk and the price several cents per pound better than the average of years. The bees, too, have gone into winter in good shape.

Aside from weather conditions, Texas beekeepers have two other very serious problems to cope with—namely, foul brood and the bee-moth. In some sections of the state foul brood is being handled to some extent, while in other sections little or no attention is paid to it, and it seems a hard matter to get the co-operation of the beekeepers along this line. However, during the year just past, according to State Entomologist Paddock, there were in the service twice as many inspectors as at any time in the history of the work. It may be assumed that the work will be prosecuted as vigorously as ever, and that conditions will improve materially.

The bee-moth is very destructive in this climate, owing to the warm weather; but this trouble could be dealt with very satisfactorily if the beekeepers were not quite so careless with their equipment. From personal observation in almost every case we found the moth was most prevalent where little interest was being taken in the equipment. Often what little honey the bees had stored (with little or no attention being given them) had been robbed.

Beekeepers in Texas, as well as in all other southern states, should remember that the bee-moth in the Southland does not have to encounter a winter freeze as it does in the North. A temperature below 32 degrees Fahrenheit, which always occurs in the northern states, will kill out both

IN TEXAS

eggs and larvæ of the bee-moth, wherever left over. It is, therefore, necessary that the beekeepers of Texas be constantly on the alert dur-

ing winter, watching all their combs that are not in hives with bees. Mr. S. P. Paddock has published State Agricultural College Bulletin No. 158—the best treatise on the bee-moth that has ever been published. Every Texas beekeeper should send and get it. Apply to College Station, Texas.

Swarming conditions in Texas are very different from those in some of the northern states. In Texas, swarming will be rampant during the fore part of the season, but will stop almost entirely as soon as the main honey-flow is under way. Whether this is due to the fact that the queen is "honey-bound," and therefore cannot supply the hive with a lot of emerging brood, or whether the bees are too busy to think about swarming, is not easy to determine.

In all probability the same conditions that stop swarming in Texas will also stop swarming in the northern states. But such conditions in the North are seldom or never the same. The late W. Z. Hutchinson once made the remark that a very heavy honey-flow would check swarming in the North as well as in the South, and probably he was right.

The beekeepers of Texas should realize that, all things considered, they have one of the best states for honey production, and as good a chance as any for obtaining a fair price for their product; and the sooner they look upon their bees as an investment and not as a "white elephant," the better will conditions be with them.

Texas is proud of the fact that it is the largest state in the Union. The United States Census Bureau has more than once credited it with having produced the largest amount of honey, and this is probably true. The seasons are long and the honey-flow varied. Were it not for occasional severe drouths Texas would probably be always in the lead.

Texas has an immense amount of undeveloped territory, much of it arid; but most of it can be reclaimed by irrigation. It has a bright future, because the time will come when its tillable land will be developed to a much greater extent than now. It should be borne in mind that much of the area of Texas is new and hence there is room for more northern development.

JUST as a teacher, before taking up the first lesson of a new study, gives a talk on the work before the class, so I want to discuss briefly the general subject of beekeeping before we take up our first lesson proper which will be in the February number of GLEANINGS. In this talk I wish to give the beginner in beekeeping some notion of what reward his work promises, what he must endeavor to do to win success, and what natural traits he should possess or cultivate in order to get the most—in honey, money, and pleasure—out of the beekeeping business.

The rewards that may be promised the faithful and intelligent beekeeper are as certain as those of many professions and better than most, for to the promise of profit is added that of pleasure and health. As for financial profit, Dr. E. F. Phillips, in charge of bee-culture investigations for the United States Department of Agriculture, says that in an average locality the bees may be made to pay for themselves almost from the start, and for the additional apparatus needed in increasing the apiary, as well as show some profit besides. Dr. Phillips further states that the annual crop of honey in the United States amounts to at least \$20,000,000 and the beeswax to \$2,000,000 more. This vast amount is distributed among many beekeepers—not equally, for there are lean years and fat years in different localities, much depending on varying conditions of weather and plant life; on the conditions of health and vigor within the hive; on the market and selling methods. To sum up conservatively this question of financial profit, I would say that the successful beekeeper is well paid in money alone for the time he spends in his work, and there is no other branch of agriculture which can be made to yield as great a return on so small an investment as beekeeping.

The pleasures of beekeeping are to be accounted one of its greatest profits, especially in the case of the man or woman, boy or girl, who engages in it as a side line or as a recreation. There is a fascination in the study of bees that creates an absorbing interest in the little insect which has ever aroused the curiosity of mankind. Beekeeping gives a wonderful insight into the field of nature (particularly the insect world) that brings one in contact not only

BEGINNERS' LESSONS

H. H. Root

with the bees and all their wonderful habits but into the realm of plant life, a large part of which is dependent on the work of the

bees. The study of bees leads on to the study of floriculture and horticulture that opens up a whole new world of wonder. So, for the professional or literary man, grilled and ground by the monotonous cares of the day, beekeeping offers a new lease and a longer length of life.

That health accompanies this outdoor work of love and interest is as certain as that light accompanies the break of day.

Who should be a beekeeper? It is an occupation for old or young, rich or poor. It is for the professional man or woman, tired and worn with office work, and it is for the vigorous man in his prime who seeks profit and pleasure alike from its pursuit. Any person, with fair health and strength, studious, and imbued with some patience and some love of nature, may very reasonably hope to become successful as a beekeeper. The more one studies and the more one observes and is able to apply his observations practically, the more successful beekeeper he will be. He should be, too, a reader of bee lore and natural history. The greater and the wider the beekeeper's intelligence, the greater his success will be. The very few persons who may despair of becoming good beekeepers are such as have unusually nervous temperaments, little patience, and little or no love for the outdoors and natural history; and the still fewer who are seriously affected by the poison of bee-stings and stand in constant dread of them. The normal person, with a little care, can avoid stings almost entirely and need have no cause to dread them.

There is another important essential to winning success in beekeeping. It is the trait of applying knowledge promptly, and doing the right thing at the right time.

Most of all, I wish to say to the beginner that, while he has considerable to do to succeed, yet if he be willing to try earnestly he may certainly expect to acquire mastery of a profession that will yield not only honey and money but a world of new interest, full of pleasure and wonder, and which will prove a great aid to health.

With these introductory remarks I will start the regular lessons for beginners in the February number of GLEANINGS.

R. H. T., Port Ewen, N. Y.—How much does a solid Hoffman frame of honey weigh?

A. It is pretty hard to give a definite figure.

Even if the frames are crowded tightly together, there is considerable difference between the thickness of the combs, in the lower half at least, and in the amount of honey contained. Five or six pounds would be somewhere near the average. If the frames were spaced wide for extracting, the weight would be much greater—nearly double in fact.

A. H., Owego, N. Y.—How many quarts of bees are there in one pound?

A. Bees vary in weight considerably. The average number of bees in a pound is usually given as 4800. A quart contains about 3200. Therefore there are approximately $1\frac{1}{2}$ quarts of bees in a pound.

V. W. M., Charlevoix, Mich. Last winter was an unusually long one. The temperature in our bee-cellar was too low (only 32 degrees Fahrenheit) until after April. This year I have the temperature at 44 degrees. All except one colony lived thru last winter and had honey in the combs in the spring but they were all weak. The queens in several colonies died later. Is this present temperature of 44 degrees all right?

A. It is a wonder that the bees wintered as well as they did. The cellar must have been very dry. The combination of a damp atmosphere and a low temperature makes trouble. A low temperature, if the atmosphere is dry, does not do as much harm; but it is far better, of course, to have a higher temperature, say 50 degrees. This is probably better than 44; but at the higher temperature there must be plenty of ventilation.

L. D. M., Winder, Ga.—1. I can buy bees in box hives at \$1.50 a colony. I get 15 cts. a pound for extracted honey in quart fruit-jars. I have only eight colonies now, and would like to have more. Will it pay me to buy such colonies, or had I better increase what I have?

2. Can I put four box hives close together and in the spring, when the weather is warm, move them all away some distance and put one new hive on the same stand occupied by the four with one or two frames of brood to catch the field bees? Can I get a good strong colony by this plan? If it would work I would like to repeat the operation several times during the summer, and then in the late fall unite the few bees left in the box hives.

A. 1. This is a question that can not be settled for all conditions. If a beekeeper has to buy sugar at a high price in order to furnish artificial feed for making the in-

GLEANED BY ASKING

E. R. Root

crease, the box-hive proposition at \$1.50 per colony is undoubtedly the best, provided, of course, that the colonies in box hives are known to be absolutely free

from any disease. It does not pay to accept disease at any price.

On the other hand, if the conditions are such that early in the season, before the main honey-flow begins, there is a prolonged period when the bees are gathering honey slowly, making an ideal condition for brood-rearing and increase, it probably would not pay to bother with the box-hive colonies.

2. Your plan of collecting field bees from four box hives would make a large cluster of bees. While such a colony would be deficient in young nurse bees until the brood supplied had hatched, the old bees would perform this function for a time.

It would be a good plan to supply more than two combs of brood. Probably it would be simpler and more satisfactory in the end to drum the bees out of the box hives, as many as you can, including the queen. That is, actually to transfer by what is known as the Heddon short method, rather than to rely upon the plan you refer to, catching the field bees and the few young bees that might happen to be flying at the time.

L. B., Poplar Bluff, Mo. Upon examination of my bees one warm day I found one hive where the bees were flying around the entrance as tho it were springtime. On looking closer I found that they were dragging out dead bees—and there are many yellow-looking crumbs. There was quite a pile of dead bees on the floor, and hundreds of them were on the ground in front. I am a beginner and would like to know what the trouble is.

A. The yellow-looking crumbs referred to are bits of cappings, particles of comb, and pollen dust. If there was unusual excitement at the entrance of this hive on that warm day, and if the bees were fighting, it is more than likely that the colony, being weak, with a good supply of honey, and an entrance perhaps too large, was being robbed out by another colony. Under such conditions there would be a large amount of this granular substance on the floor-board of the hive, indicating the gnawed cappings. The uproar in front of the entrance, the pile of dead bees on the floor, and the dead bees outside, would point toward a case of robbing.

The bees may have been having merely a playspell. If this were just after cool or cold weather for a week or two you would find just exactly what you describe—dead bees being carried out as well as a demonstration at the entrance.

ON account of the number of conventions we attended in December it will be impossible to give even a digest of some

of the good papers and discussions that were given. Our notes of even one meeting would take all the space we could afford to give in a single issue; and therefore all we can do will be to touch on a few of the high spots in the beekeepers' conventions held at Chicago, Des Moines, Madison and Toronto in early December.

RADICALLY DIFFERENT METHODS.

At practically all of the conventions the subjects of comb and extracted honey, marketing, swarm control, and wintering occupied no little part of the time. If a beginner were to take in all of these meetings he would be utterly confused because the methods employed by different successful beekeepers were so radically different.

DISCOURAGE SWARMING.

Some producers, particularly the Dadants, do everything they can to discourage swarming, and run for extracted honey. They do not pay any attention to cell-killing, but simply provide their bees with large hives, abundant ventilation and shade, a large amount of super room, and let the bees take care of themselves until the crop is ready to harvest. Another set of producers could not and would not use the Dadant methods.

ENCOURAGE SWARMING.

They encourage swarming. One of the largest producers, Mr. Frank Coverdale, of Delmar, Iowa, had furious swarming, but he produces immense crops of comb honey. He could not be coaxed to adopt the Dadant system. Other producers running for comb honey discourage swarming; still others dequeen, and secure big crops of honey from their queenless colonies which, of course, will not swarm. They are compelled to cut out cells in seven or eight days after dequeening.

TWO BROOD-CHAMBERS FOR BREEDING.

At one or two of the conventions two or three said they secured practically the same results as the Dadants by using two brood-chambers for the queen in the early part of the season. A good queen would have, therefore, unlimited range. Within about a week of the expected honey-flow all the unsealed brood and eggs are put



in the lower story, and the sealed and hatching brood in the upper story. A queen-excluder is placed between, with the queen below.

As the hatching brood emerges in the upper story there will be empty cells for the storage of honey as it comes in. Automatically more cells are made available by brood hatching. In the course of about ten days or two weeks most of the brood will have hatched out, and the cells which it occupied will be filled with honey. Then an upper story is added. By this plan it was argued the queen could have unlimited egg-laying room as long as it was necessary to have breeding, with the advantage of using a standard hive, and having something that one man can easily lift.

MARKETING.

In regard to the matter of marketing, there was as great a diversity of opinions and methods. One class of beekeepers sell around home and dispose of their entire crop. Some of these do not look with very much favor on the large bottler who invades their territory, and they feel he ought to keep out.

Another class of beekeepers sell around home and after the local markets are supplied they dispose of the rest of the crop to large buyers of honey. Still another class job their entire crop, feeling it is far more profitable to devote their time and energies to production, preparing for the next year's season, than to waste their time and energies in trying to do what they do not know how to do.

BEEKEEPERS CUTTING PRICES.

At all of the conventions there seemed to be an undercurrent of feeling that beekeepers as a class are jealous of each other, and they are, therefore, competitors. In some cases it was pointed out how local beekeepers were cutting and slashing prices, even selling at retail below actual jobbing prices. Any amount of proof was given to show that this thing is going on in many localities, to the great detriment of the industry at large. Small producers help to establish low prices on honey. They do not know what the market is or should be, and so they will set the pace by selling their honey for whatever the dealer will pay—often as low as 6 cents for fine extracted honey. Then they will turn around

and sell as low as 6 cents to a retail consumer who comes to the door. This whole matter naturally stirred up considerable discussion along the line of co-operation. The largest and best producers believed that something should be done to buy up the crops of these small producers, or at least come in touch with them and show them the folly of selling at too low a figure when good prices could just as easily be secured.

PEDDLING 46,000 LBS. AT 11 CENTS

One large producer who sold a crop of 46,000 lbs. actually retailed and peddled his clover honey in 5-lb. pails, lithographed in colors, at 65 cts. a pail. One other producer was criticised for selling his honey as low as 85 cts. in 5-lb. pails. It is evident that the man who gets 65 cts., paying 10 cts. for his pail, gets only 55 cts. for 5 lbs. of honey *at retail*. But he is a successful beekeeper, and sells his crop because he is a natural salesman. But these prices at retail have a tendency to bring down the price of all honey.

TOO MUCH WINTER PACKING.

There was about as large a diversity of opinion in the matter of wintering. Some held that it is better to winter indoors, others outdoors without much packing. Some would go to the extreme of having excessive packing, arguing that they would save stores thereby. If the experiments conducted at the Bureau of Entomology are of any value it is apparent that too much packing cannot be used. The limit will be set by the cost of the winter cases.

RENDERING UP OLD COMBS INTO WAX.

This question received more than ordinary attention at the Ontario convention. While many were still using the solar wax-extractor, the majority were using artificial heat in connection with some form of press. The tendency seemed to be strongly toward the hot-water method as used by O. L. Hershiser and H. B. Sibbald. Mr. Hershiser, when called to the floor, strongly urged the importance of *boiling* water and of alternately raising and lowering the screws, repeating the process until the slumgum is washed nearly clean, for it was a process of washing as well as squeezing. He felt that water *constantly* boiling was much more effective than water that had been brought merely to the boiling-point.

He had been able, he said, to get anywhere from 7 to 8 per cent of wax out of ordinary slumgum which he had bought of beekeepers, and which they believed was perfectly free of wax. This fact alone proved to him that, ordinarily, beekeepers

who burn up their slumgum are burning up thousands of pounds of wax.

Mr. Hershiser is always on the market for slumgum, because by his process and method he can make a good thing by giving it a further cleaning.

EXTENSION WORK IN THE SOUTH

One of the addresses delivered at most of the conventions was one by Dr. E. F. Phillips, of the Bureau of Entomology, on extension work in beekeeping. He pointed out that the books and journals devoted to bee culture were not reaching a large class of persons who keep a few bees. The schools and colleges that offered courses in beekeeping reached only a few. Bulletins and circulars were not the most effective method of teaching. Apiary inspection was the most effective instrument for teaching bee culture among the class who were not reached by other means. Considering the fact that only about one-twentieth of the nectar in the country was gathered, and the further fact that the market was not able to supply the demand, there was need of more and better beekeepers. Some objected to any kind of instruction work whereby there will be more producers in the field. It was, he said, somewhat difficult at times to have patience with such objectors; for practical experience showed there was no such thing as overproduction. The overwhelming argument against the making of more and better beekeepers was the fact that beekeeping has scarcely as yet established itself as a branch of American agriculture. Present crops are inadequate to make honey a staple market article.

Among the agencies for extending proper methods of handling bees among a class not reached by other means was extension work, both state and national. The last session of congress made an increase of \$5000 for extension work. Under the civil-service law, candidates were examined and appointments made. Three men he said were now in the field in the South, working on a co-operative plan with the Department of Agriculture of the several states where they are working. By confining this extension work to this region there was all the work that the three men can do.

The people in the South were responsive to this class of work, and, moreover, they needed it. Under the present appropriation no more men could be put in the field. But even as it was, some results were being secured. Extension workers in connection with men already in the field employed by the state were giving bee demonstrations, showing how to handle bees, and how to know and cure bee dis-

eases; and when it was remembered that there were more bees in the southeastern part of the United States than anywhere else in the country it could be seen that the field was large. It was very important at this stage of the game that a knowledge should be had of bee diseases among a class who were not and could not be reached by means of printed matter.

CO-OPERATION

Prof. Francis Jager spoke on the subject of co-operation among beekeepers. He has a plan which, in connection with the National Beekeepers' Association, ought to bring results. Among other things he said that Dr. C. C. Miller was right when he said in Chicago last February that the National Beekeepers' Association was a valuable asset with immense possibilities to do good to the beekeepers of the country. The National was the only existing agency able to pull the beekeeping industry out of the rut. We might be able to deceive ourselves that we were accomplishing wonderful things; but the facts, however, proved just the contrary. Honey today was the cheapest food on the market, altho the demand for it had never been greater. We were underselling each other, altho the demand for honey was many times greater than the supply. A nation-wide organization was needed to bring order out of this chaos. There were far-reaching problems which only the National organization could attempt to solve. For instance, obtaining State and Government aid for the instruction and organization of beekeepers, to get a correct census of the bee industry in 1920, to adjust the freight and express rates on honey, to protect ourselves against the substitutes for honey which are driving us out of the American market under the name of honey syrups, "better and cheaper than honey" glucose, honey adulterated with five or more per cent water, etc.; and the item of supply and demand of over-production was still a closed book to the American honey-producer. The standards of packing and shipping, the uniform containers for extracted honey, the imports and exports of honey, the gathering of honey statistics by the government Bureau of Crop Reports, and a judicial distribution of the same, thereby fixing the right price for honey, advertising of honey, also the increase in the production and consumption of honey, and innumerable other matters, would, he said, be discussed at the National Beekeepers' meeting in Madison next February. While many beekeepers did not take much stock in what was

being planned, they could not but admit that something along the lines outlined must be done soon and somewhere by somebody. There was no doubt in his mind that the National, once she would find herself, would become the agency for the advancement of beekeeping, and the day was not far off when it would be considered an honor and a privilege to be a member of it.

"TIN LIZZIES" AND TRAILERS.

At several of the conventions the value of a small motor truck for carrying supplies and men to the yards was emphasized. It was remarkable how many have been using with satisfaction the little "tin Lizzies," otherwise called the Fords. The user of one said they might poke fun at them all they might, but added, "They got there." And, what was more, the cost of maintenance and care was very low. He said he used in connection with them trailers with either two or four wheels, the latter being preferred. One man went so far as to say he had carried a ton of honey on a trailer, a thousand pounds on the Lizzie itself, and two men and three boys.

Since the advent of cheap and serviceable automobiles the whole method of managing outyards had been modified. Bees were being kept at more remote points, and not so many in a yard, avoiding overstocking. For this purpose the little Lizzie with or without a trailer was reported a great success.

For a trailer some used, for want of something better, an ordinary light spring wagon with high wheels. Others felt that it was a little better to use rubber-tired machines, especially those with pneumatics. It was considered advisable to use springs, and straps to keep the springs from jumping up too high. An ordinary light spring wagon was not suited for a 20 or 25 mile run over ordinary roads. At those speeds when it struck a chuckhole something was liable to happen.

THE QUESTION-BOX

At some of the conventions the question-box was almost a joke because it was made up of questions that a beginner would naturally ask, and which are covered in all the standard text-books. At other conventions the question-box was certainly a valuable and useful feature—an excellent filling between the papers and the more serious discussions.

Some of the most helpful things we have ever picked up at a convention came thru the avenue of the question-box. It transpires, then, that the question-box

should be handled by an expert, as it was in most cases, who will give out only questions the discussion of which is worth hearing by one who has come a hundred miles or so, and is paying hotel expenses.

THE BETWEEN-SESSION TALKS

The between-sessions man-to-man talks, as they always are, were particularly valuable in this chain of conventions; and in a general way we may say the conventions that have just closed were some of the best we have attended. The crop has been large. The attendance at most of the meetings was very much above the average, and the enthusiasm the best.

BANQUETS AT BEE CONVENTIONS.

At three of the conventions in the chain of meetings, banquets were held—first at the Michigan convention at the close of the second day, as mentioned on page 1176 of our Dec. 15th issue; second, at the Iowa convention at the noon hour. This was served in the dining-room of the Chamber of Commerce, at which Governor Clark, Mayor MacVicar, Secretary of the School Board Clinite, State Superintendent of Schools Devoe, and City Chemist Harrison were guests of honor. The latter gave a talk on the food value of honey, bringing out some interesting comparisons showing honey to be highly nutritious, and, compared with a large list of other foods, to be cheaper when the nutritive value is considered.

Thru an arrangement with the Chamber of Commerce, honey and biscuits were served to all the patrons of the Chamber dining-room on that day.

Just preceding the banquet, thru the efforts of Miss Belle McConnell about 124 pupils from Irving school sang a couple of bee songs that "brought down the house." The children were then each presented with a jar of honey, the gift of the A. I. Root Company's branch at Des Moines.

The last banquet which was largely patronized was held in the dining-room of Hotel Carls-Rite, Toronto, Can., on the evening of the second day. No toasts were offered after dinner, but all assembled in the convention room where a lantern-slide talk by former Sec. Wm. Couse, of Stroutville, Ontario, was given. The speaker, one of the early founders of the organization, knew intimately all the men who had to do with the making of the Ontario Beekeepers' Association. He was particularly happy in his personal references to each member whose picture was thrown on the wall. Among others he paid a glowing

tribute to D. A. Jones the one who, at one time, was the leading beekeeper of Canada. He related a number of interesting incidents connected with the life of that remarkable man—one who saw the funny as well as the serious side of life. Notwithstanding this lecture lasted over two hours, it was listened to most attentively clear thru, often calling forth applause after applause.

THE NEW TEXAS BEE JOURNAL

Vol. I. No. 1 of *The Texas Beekeepers' Item*, edited and published monthly by Louis H. Scholl, New Braunfels, Texas, has reached us. The price is 50 cents per annum. As announced in our previous issue, it is more in the nature of a small newspaper of four pages than a journal. In fact, it says of itself that it is "to be a newspaper for beekeepers. In this the *Beekeepers' Item* will be in a separate class." Mr. Scholl is no stranger to the beekeeping public, and as a writer of bee lore he has had not a little experience.

Texas is a very large field in itself, to say nothing of the great expanse of territory in the Southwest. The conditions in the Lone Star State are somewhat different from what we have in the northern states, and somewhat different from those in some of the southern states; so it is felt that there is a field for the new paper. We not only welcome it among our exchanges, but wish it a Happy New Year and many more of them.

The short-course in beekeeping at the Ontario Agricultural College will be held Jan. 9 to Jan. 27. A copy of the attractive program for this course can be had by writing to Mr. Morley Pettit, Provincial Apiarist, O. A. College, Guelph, Ont.

Dr. E. F. Phillips of Washington, D. C., and E. R. Root of Medina, Ohio, expect to attend the convention of the beekeepers of North Carolina on Jan. 11th in Board of Trade Hall, Winston-Salem, N. C.

The Ohio state beekeepers' convention will be held at Columbus, Feb. 1 and 2, 1917, during farmers' week, at the College of Agriculture, Ohio State University.

The next meeting of the National Beekeepers' Association will be held at Madison, Wis., Feb. 6, 7, 8. See editorials and Convention Notices.

Mother Bee NURSERY RHYMES

By M.G.P. (*Mother Goose Plagiarized.*)



All the King's horses and all the King's men,
 Could'nt put honey in sections again!!



HEADS OF GRAIN FROM DIFFERENT FIELDS

Winter and the New Year*

BY GRACE ALLEN

Such rest is here, and peace, and quiet breath,
I scarcely know if this be sleep or death.
There is no sign of anything alive,
So solemn and so still is every hive.
No murmur here, no eager flash of wing
That thru the summer made our hearts to sing,
But every hive is still as some old tomb
Of desolate dead dreams and withered bloom.

The earth itself is white and still and cold
And either dead or very, very old.
This bare dry twig was once a leafy vine
Whose sap went mounting like some racy wine
That somehow made a miracle of green.
Is this, then, all the miracle shall mean,
This brown, unlovely, lifeless-looking thing?
If so, why should we ever smile or sing?

Yet smile we shall, and sing, because we know
A brave New Year is coming o'er the snow,
A fair New Year to wake the earth from sleep,
And heal, perhaps, the hurt of hearts that weep.
And all life's ancient gifts this year shall bring,
Of youth, and hope, and bees that hum in spring;
And strange new beauties never known before.
And some year shall bring peace forevermore.

* See Cover picture

Late Cell
and
Comb Building

You will be interested to know that an observation hive of bees shipped here from Medina started a queen-cell, and after the cell was sealed I took the hive clear across the city on a surface car and still it hatched. I put it in a hive of bees on the roof of our building here where I am handling some bees for your Chicago retail displays. As a queen-breeder I consider this rather remarkable, for not the least of my trouble is to get cells to hatch when they have been handled a little roughly. If you know anything about Chicago surface lines you know what a nice smooth ride they had.

I noticed in the Oct. 1st Gleanings Dr. Miller says bees "will build it as late as they can gather any surplus providing they need it for stores." Speaking of comb, if I had you and Dr. Miller here on the roof I could show you comb one-half Hoffman size hanging from an inner cover, and built during the past week when there were no days

when bees could fly. Part of the bees have been taken out in observation hives, and the rest remaining in the hive built the comb when they were unable to secure any outside honey at all, let alone storing surplus, and when they could scarcely cover the remainder of the frames in the hive. After Dr. Miller is hit like that I imagine he will smile and say "locality."

Kenneth Hawkins.

Plainfield, Ill., Oct. 12.

[While the condition is a little unusual, yet we are prepared nowadays to expect almost anything. If we were to try to bring about this result of getting a cell that would hatch in this way, we should have to try a good many times before we succeeded.]

With regard to the comb built from a cover, we know that bees will sometimes build comb this way between two brood-combs, when a space is left between; but we never knew them at the time of the year of which you speak to build combs outside of the brood-nest—that is, on the outside of the outside combs.—Ed.]

My Plan of
Getting Rid of
Laying Workers

I never have the least trouble in getting rid of these pests. I use only the old process of removing the whole colony to a spot 30 or 40 yards away, shaking out all the bees, and returning the hive and combs to the old stand, leaving the bees to find their way back as best they can. I shake on to a sheet, because sometimes the bees have an old queen that has become a drone-layer. I always leave in the hive any brood that the bees may have, then give one good comb of worker brood, which I place in the center.

I do not recall a failure by this plan. The theory is that a drone-layer never goes outside the hive, and consequently will not know her way back to it if taken some little distance away and shaken out on to the ground. My experience proves that this theory is correct.

Major Shallard.
S. Woodburn, N. S. W., Australia.

Why the Minerals in Honey
Are Valuable

In the diagram showing the chemical composition of honey, p. 1010, Dec. 15, 1915, is undetermined matter—iron, lime, sodium, sulphur, magnesium, potassium, manganese, phosphoric acid, and so on. These minerals and salts are all found in the human body, and are obtained from the food we eat. If they are obtained of the apothecary, and taken in the inorganic state, they are not assimilated. They are injurious. The only

HEADS OF GRAIN FROM DIFFERENT FIELDS

way these minerals and salts can be assimilated by the human system is in the food we eat. Doctors' prescriptions cannot supply a deficiency in these elements. They must be obtained in our food. Honey is the only natural sweet. Even maple sugar is prepared by boiling. White sugar has been clarified until these salts are eliminated. These salts and minerals and other very volatile substances are found only in their proper proportion, and so they can be assimilated in honey, fruits, nuts, vegetables, and such foods as may be eaten in their uncooked state. Eugene Christian's book on food chemistry explains these matters very clearly and fully.

Halley, Colo., Oct. 24.

C. Stimson.

Treatment for
the Two
Brood Diseases

My husband kept bees
for fifteen years. Two
years ago he died.
Foul brood bothered

him more or less all the time. This spring I hired a beeman from California. He claimed to be an expert. You know bees in our locality have been in a bad condition. This spring half of them were dead. Some claimed that sour honey was the cause of it. The man used all clean combs, and cut out all foul-brood colonies. Over and over again he exposed them to strong sulphur fumes. Well, the man left about a month ago; and while going thru the bees putting them into winter quarters I found a new disease. Some colonies again are foul. Black brood is present—both kinds. Do you think sulphur is a sure cure? We always destroyed every comb from the ones that had American foul brood, burned the hives out with a torch, and boiled the frames.

If you run combs thru the extractor with brood in, will it kill or dislodge the brood? Will honey that is only half capped when extracted sour or ferment? He ran for extracted honey only, and worked it that way. He never used an excluder, and extracted when the combs were only partly capped over. My husband raised only comb honey, and had good crops in this locality.

If we had a foul-brood inspector in this part of the country it would help us much. We had hardly half a crop this year—all clover with a little fireweed honey. It rained too much thru the summer; but the bees gathered lots of honey later; but the most of it is strong.

Subscriber.

Oak Point, Wash., Oct. 16.

[It is probable that you had among your bees both American and European foul brood. Some call the latter black brood.

Sulphur would be of little value in disinfecting the combs. In the case of American foul brood the combs must be melted up and

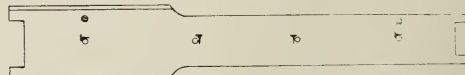
the frames burned, the hives scalded or burned out on the inside before they could be used again. With the European foul brood the case is a little different. The treatment consists in keeping the colony queenless for ten days and then requeening. The process may have to be repeated; but when a new queen is put in, it must be an Italian queen of resistant strain.

It is possible to extract from combs containing brood; but where it is unsealed some of the young brood will be thrown out with the honey, and it will be scattered all thru. It is usually not advisable to extract from brood-combs, on this account. Honey that has been half capped over may or may not sour when extracted. It depends upon the climate and the kind of honey. Some honeys can be extracted when only parts of the combs are capped over. Others should be capped over entirely before being run thru the extractor.—Ed.]

Preventing Wires
from Sinking
into End-bars

A year ago some one
recommended that in
nailing a frame one of
the nails thru the

upper end of the end-bar into the top-bar and also the one thru the bottom-bar up into the end-bar be not driven quite home at first, but that the ends of the wire when wiring be fastened by winding round these nails and then the nails driven home. I suppose the idea was to save the time taken in picking up and driving two three-ounce tacks; but I have discovered in trying the plan that some time is lost in extra "fiddling" of the wires; besides, the wires are not likely to be as tight as they should be. I took two frames and wired one exactly in accordance with these directions, the other the same except that the ends of the wires were fastened to three-ounce tacks driven at the sides of the holes, so that the wire from the holes to the tacks ran at right



angles to the grain instead of with the grain. Then I tried the "tune" of the wires and found that they were tighter on the frame where they were fastened to the nails, as was shown by the higher pitch of the middle wires on that frame, but that, nevertheless, the top and bottom wires, which felt the influence of the way of fastening, were a trifle slacker on that frame than on the one with the tacks.

The difficulty in getting the wires tight is that, when they run out of the holes lengthwise in a direction lengthwise of the

HEADS OF GRAIN FROM DIFFERENT FIELDS

grain, they sink into the wood. "Fiddling" the wires is done to overcome this sinking into the wood rather than to straighten the wires across the frame. I have tried to devise a way to obviate this difficulty; and the best plan I have found is to take one-ounce tacks, lay a tack on the edge of each hole across where the wire is to run, and imbed each tack in the wood with one tap of the hammer. This saves enough time in fiddling the wires, perhaps, to pay for the time spent in fixing the tacks, and makes it possible to get the wires tighter than is possible in the ordinary way. On the other hand, it slightly increases the risk of broken wires, but does not make that risk serious when one knows how to do the work. The illustration shows an end-bar with three-ounce tacks opposite the top and bottom holes, in the right place for fastening the ends of the wire, and one-ounce tacks imbedded ready to have the wire run over them, assuming the wire to be all one piece; but the one-ounce tacks at the upper and lower holes are hardly needed, since there the wire runs across the grain of the wood.

Stephen T. Byington.

Ballard Vale, Mass.



Where the
Cross Bees
Come from

In regard to the cross
bees that follow one
around the yard, they
are bees from a queen-

less colony, nine times out of ten. If the colony is given a queen the nuisance will stop—at least this is my experience. I had more trouble from this source last season than at any time during the last forty years.

To provide for such emergencies as laying-worker colonies or colonies having drone-laying queens, or colonies actually queenless, I keep several nuclei on hand with young laying queens. These I put on top of such colonies, the only entrance being down thru the brood-chamber below. I have not had a failure in twenty years. I have been a continuous reader of *Gleanings* since 1875.

Kuna, Idaho.

E. A. Cleaver.



Disinfecting
a Hive

When there has been
foul brood in a double-
walled Buckeye hive
would it be sufficient to scrape hive, bottom,
and cover thoroly, and then paint with
kerosene oil, or would it be necessary to
char it?

John G. Bodanhafar.

Kendallville, Ind., Oct. 27.

[Scraping your Buckeye hive on the inside would be all right, but painting it with kerosene would not be sufficient. A better way

is to put a little straw in the hive, set it afire, and simply blacken the inside surface of the hive. It would hardly be wise to omit this. If you mean by painting the hive with kerosene on the inside, and then touching a match and letting it burn until it is blackened, that would be all right. It is not necessary to burn deep.—Ed.]



Why I Wire Ver-
tically as well as
Horizontally

I have a way of wiring frames that is certain to keep the wires from sagging that is not so expensive as splints. It costs a trifle more than the plain horizontal wiring, however. I wire the frames both horizontally and vertically. Usually I use only one vertical wire in the center, tho sometimes two, dividing the frame in three equal parts.

I pierce holes in the top and bottom bars; then after wiring the frames horizontally I pass a wire down thru the top-bar, being sure it is long enough to reach past the bottom-bar; then I take one turn around the upper horizontal wire, then go to the second, third, and fourth in like manner, then thru the hole in the bottom-bar. I then stretch the vertical wire and fasten with small nails at top and bottom. It makes a neat job if the wrapping is done properly around the horizontal wires. I have used this method for three years, and can find no fault with it so far.

When putting in the foundation I put the sheet in the groove, then cut the wedge in six pieces and use three of them—one in the center and one an inch or so from each end of the frame. The wax does not tear off at the top as it does sometimes in hot weather when the whole wedge is used.

To imbed the wire in the wax I use a hot imbedding-tool, pushing the wire into the foundation. The melted wax makes it stick fine. I heat the imbedding-tool over a lamp.

Wheatland, Wyo., June 11. F. S. Harter.



The Spacing
of
Brood-frames

I use the old-style
loose-hanging frames.
I have tried the fixed
or spaced frames twice

during my experience, and each time after using them a few years I whittled off the projections and made them loose-hanging frames. I will never be induced to use the self-spaced frame again.

I space the frames as follows: For early spring while the bees are building up I crowd the frames up to $1\frac{1}{8}$ to $1\frac{3}{8}$, so that the bees can cover more space. Before the bees think of swarming I space them $1\frac{1}{2}$

HEADS OF GRAIN FROM DIFFERENT FIELDS

inches for the rest of the year. The loose-swinging frame is the best for this purpose, and I believe for all other purposes except moving; and for moving I use a screen frame on top with small wire nails driven thru the ends of the frame. This is tacked on the hive, and these nails projecting into the top-bars automatically fasten all the frames.

The bottom of the frames can be held by crowding wads of paper between them.

Oswego, N. Y.

F. H. Cyrenius.

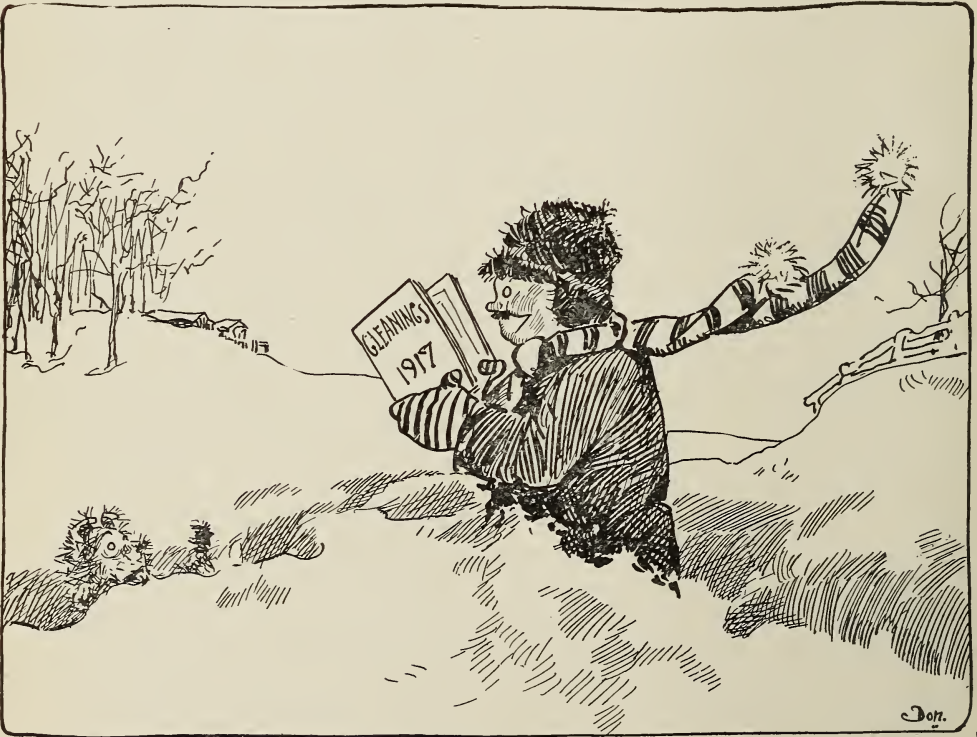


Would This Fool Why do bees seem to the Bees? prefer not to build comb down to the bottom-bars of frames? If, say, a hundred frames are examined it will generally be found, I think, that in at least 75 per cent of them the bees have left a space between the comb and bottom-bars, sometimes as much as three-quarters of an inch. This occurs, too, where full sheets of foundation

have been used that, when first put in, nearly touched the bottom-bar. Why is it? I have lately heard a theory suggested that the bees do this so that they can more readily and quickly get from comb to comb. It will be noticed that where natural comb has been built—that is, without the aid of foundation—the bottom edges are made round, and are not, therefore, angular as they are when attached to the bottom-bar of a frame. The bees are thus probably aware that this exactly suits their requirements and that they are thus able to pass around from side to side expeditiously. Now if this is proved to be the case would it not be better to humor them in this respect and thereby induce them to attach the comb invariably to the bottom-bar as we wish them to do? If this could be accomplished by having the lower edges of the bottom-bars of frames made rounding, instead of square as at present, it would pay to make the alteration.

W. J. Sheppard.

Nelson, British Columbia.



THE BACKLOT BUZZER
BY J. H. DONAHEY

Benny Appleblossom's woman says she's mighty glad the new Gleanings will only come once a month now instead of every two weeks. Benny always knocks off when it arrives and jes' calls it a half a day.

IN our issue for Oct. 1,

I gave a sermon that was preached here in Medina in the absence of our pastor. Shortly after that sermon the good pastor sent word to me wanting to know if I would go and talk to his people in East Cleveland on the

subject of religion and business. I told him I should be glad to go. Well, when he introduced me to the large congregation of nice people in that Kinsman Ave. Church he explained that he had invited Mr. Root to talk to his people because of a little motto cut in sandstone over the front of the first brick building we erected, in 1878. It seems when he saw that motto, "In God we trust," encircling a straw beehive, he said that the man who had the conviction and courage to start out in business in that way ought to be able to tell them something about mixing business with religion. Well, my good friends, I am not going to tell you anything about that talk more than to say that, after I had finished, so many nice people, both men and women, shook hands with me, and perhaps talked a little, that I did not get home till near midnight; and I think I may add that I did not get tired or wearied, even if it was long after my usual bedtime. In fact, I felt unusually happy during the whole 35-mile ride in my Ford automobile. Now I am ready to look at our text.

The way I came to use the text was this: I asked brother Parker to read the last half of the 5th chapter of Matthew before my talk, beginning with the 19th verse. Well, he read it all thru without note or comment until he got to the 31st verse. After reading that verse he stopped and looked at his audience and then said something like this; but on account of my deafness perhaps I did not catch all of it nor get it just right; but so far as I can remember he said in substance:

"Brethren, does not this passage just now, in view of the 'high cost of living,' sound to many of us a little odd? 'What shall we eat and what shall we drink?' With these things going up and up every day we are here enjoined to 'take no thought.' Something has been said about a new fifty-cent piece; but what benefit to us



Take no thought, saying, What shall we eat? or, What shall we drink? or, Wherewithal shall we be clothed?—MATT. 5:31.

Thou shalt love thy neighbor as thyself.—LUKE 10:27.

Seek ye first the kingdom of God and his righteousness, and all these things shall be added unto you.—MATT. 6:33.

will be a new coin while fifty cents buys so little of the necessities of life to what it did a few years ago?"

I was a little disappointed to have him drop the subject there. I did contemplate making some reply to it in my talk that evening; but what I outlined

to talk about took so much time that I had to let the matter drop. And another thing, if I am correct, this one verse has been more or less of a stumblingblock all down the ages. My good pastor, Rev. A. T. Reed, once said when I went to him with this verse that this passage doubtless means that we are to take no *anxious* thought, or, if you choose, *over-anxious* thought. Do not worry too much about *what* we shall eat or what we shall drink. If I understand it, the dear Savior meant it as a rebuke to selfishness; and selfishness, when we get right down to it, is the foundation (or so it seems to me) of almost all wickedness and sin in the world. People are greedy. I do not know any better word than *greed* to express it. We need to be constantly on the watch for this outcropping greediness. When I say *we* I include myself. While I strive against this prevailing sin and watch and pray to be delivered from it, the low animal part of my nature keeps crowding in. In order that you may make no mistake in understanding what I mean I will mention something that occurred but yesterday.

I dug some fine new potatoes, and asked Mrs. Root to test them. When they were put on the breakfast-table, after asking God's blessing on our morning meal on the new day, I started to pick out for *myself* the very best potato in the dish. I was going to take the best one, and Mrs. Root would likely take the smallest and poorest as she generally does. Well, let me repeat, I was *going* to take the best potato instead of giving it to Mrs. Root, whom I profess to love more than all else in the world—yes, one whom I profess to love more than *self*; but I am glad to say I did *not* take that best potato after all. I took another one and then passed the dish over to Mrs. Root. Do some of you wonder why I did not pass the potatoes to her before I took any? Well, she was out in the kitchen after

something, and so I took my potato and passed the rest to her on her return. Now, it is easy and natural to give your good wife the preference. I presume most of you do it already unless in a fit of absent-mindedness, as with myself, you, without thinking, take the best and leave her the poorest. Well, if we so far forget ourselves as to give way to selfishness when no one but the good wife is present, how is it when you go out in the great wide world? How far do you carry out the second one of our texts, "Thou shalt love thy neighbor as thyself"? Oh, yes! I know we do by fits and starts show that we love humanity. Perhaps some of us suffer and lack at times because we love humanity more than we love ourselves or our families; but, notwithstanding, selfishness and greed to a great extent rule the world. It is not only food and drink, but passion for riches, and constant watching to see that we get the best end of the bargain, looking at the affairs of the day from your own single selfish standpoint.

When I left my chickens down in Florida the last of April, eggs were only 15 cents a dozen. When our good grocer (and I am glad to say he is a Christian man) said he was sorry he could offer me only 15 cents a dozen, and did not want them even at that price, I shall have to admit that at first I felt disappointed to think that that small price would hardly pay for feed. But I said inwardly, "Get thee behind me, Satan;" and then I looked up smilingly into the face of my good friend Burnett and said, "Mr. Burnett, don't you feel troubled or worried. If you and I both lose some money on account of the drop in the price of eggs, we can rejoice in the thought that what is our loss will be a gain to somebody else. The poor hard-working people can now have plenty of eggs in place of being obliged to go without them when they are fifty cents a dozen, as they were last December."

The editor of the *Good Health Clinic* suggested a few days ago that while we were raking and scraping and grasping to pile up treasures here on earth we should keep in mind or consider that when Mrs. Hettie Green (the world's richest woman) died she could not carry with her even a two-cent postage stamp to put on a letter "From Hades to Heaven," or, as it might happen, t'other way about. I think I have read somewhere that a certain miser when he died wanted all his money put into his coffin near him. I cannot remember whether his friends carried out this crazy idea of having the money he worshiped as near to

him as possible and as long as possible or not; but it illustrates the point.

By the way, how often we see parents rake and scrape and save; and just as soon as they are safely buried and out of the way the children scatter the hard-earned wealth to the four winds! It really did them harm. The parent, or perhaps parents, in spending their life to save up, have brought a curse on the children they professed to love. In other words, the boys and girls would have been much better off to start with little or nothing, just as their parents started.

Let us consider now the first part of the text—"What shall we eat?" placing the emphasis on the word *what*. I once knew a man who was honest enough to say that all he lived for was something to eat and drink. He said he wanted the best things to eat that the world affords, and probably, also, the best things to drink. I do not think there are many who would own up as he did, but I am afraid there are a great lot of us who in reality are not much better. Over and over again physicians tell us that tempting dishes, and many times expensive dishes, are what keep doctors busy. Instead of being satisfied with plain simple food we must have a lot of the highest-priced stuff to be in fashion—ice-cream, pies, and cake, and expensive fruit—when we do not need them; and, to make matters still worse, something more to eat away on into the night when the digestive apparatus ought to have a chance to clear up and get everything out of the way for the work to be done on the morrow. For the past five or six weeks I have been having just such luscious peaches and a little bit of cheese for my afternoon meals at about five o'clock; and with the nice peaches we have now, I have often said to Mrs. Root, "Sue, I would not swap my fruit supper for the best menu the world can furnish." Sometimes when I for some good reason go to a banquet or party, I eat a little of the repast prepared so as not to attract attention. My digestive apparatus rebels every time. Our habits, especially when Nature is consulted and has her way, are a good deal like the chickens'. When the chickens get accustomed to one particular program they make a big protest if anything interferes. For instance, I let my Eglantines out to have a run in the garden or in the cornfield every day about four o'clock. Now, of course, *they* have no timepiece; but if I do not get around at the exact hour, or I might say the exact minute, the whole tribe of chickens will be up around the gate manifesting in every way in their power their impatience

to be let out where they can ramble and have a big time. The fowls thrive better and lay better when they have a regular program each day. So it is with us; and Nature will indicate what that program should be.

In regard to the latter part of the verse, "What shall we drink?" it rejoices my heart to recognize day by day that the whole wide world is just now deciding on water—just water, pure water, and nothing else; and I think the whole wide world is also coming to the conclusion that the safest and best drink at *mealttime* is good pure milk. At such a time milk may take the place of water because it is both food and drink. May the Lord be praised for the craze, if I may use the expression, that is just now coming into fashion of using milk instead of beer, and I hope I may say, to a certain extent, letting milk take the place of both tea and coffee.

Now something about the high cost of living that seemed to worry even our good pastor who preached that splendid sermon given in our Oct. 1st issue that I have referred to. He says he thanks God for seven sons, no one of whom has ever drank or smoked, and who, he feels, are not only saved but *safe*, because they have Christ Jesus in their hearts.

Now I wish to refer to the verse beyond the one I have chosen for my first text. In fact, it is the verse I used in my talk in that church in the great city of Cleveland. If one will read the chapter all thru we shall see the admonition is that, instead of worrying about the high cost of living, what we shall eat and drink, etc., we should "seek first the kingdom of God and his righteousness." I suppose there are some good people who would say that this text might have been all right in olden times, but that it will not "work" just now. I tell you it *will* work *just now*. When any human being starts to put down self and greed, and make it his business to put first the kingdom of God and his righteousness, the other things, food and drink, will surely come. "O thou of little faith! wherefore didst thou doubt?"

To illustrate how God keeps his promise in the last part of the last text, "all of these things shall be added unto you," etc., let me refer briefly to three occurrences in my life that have already been mentioned, perhaps, in these Home papers. When I first started out to follow the Lord Jesus Christ, and to let *him* rule instead of *self*, I started these Home papers in GLEANINGS; and as I wanted my message of "peace on earth and good will to man" to reach as

many people as possible, I made the declaration that I would send our journal free of charge to every foreign missionary on the face of the earth if the friends who read GLEANINGS would give me the addresses of those missionaries. Not long after, one of my helpers suggested that he was afraid I would get into trouble, as there are more missionaries in the world than I had any idea of; and the postage was 24 cents a year, even with our little light journal, and in some places it was 48 cents a year. Could I stand all this postage without getting any subscription money at all? I hesitated a minute and finally replied, "My good friend, don't worry. The great Father above will furnish the stamps as long as I am trying in my own humble way to spread the gospel."

Was the promise fulfilled? Why, bless your heart, it was the best investment I ever made. Now, I hope you will believe me when I declare that it never entered my busy brain that it would help our business financially to send GLEANINGS free to missionaries. By the way, it just occurs to me that a postal card came to me yesterday, Oct. 17, from India, which reads as follows:

Mr. Root:—Thru your kindness GLEANINGS has been coming to us for 30 years, I think. Thank you. It has been a source of much enjoyment, Mr. Mason having many a hearty laugh over your sermons, as well as getting helpful suggestions from them.

We thank God for your strong Christian life, giving out such influence as this stricken world is sorely needing. We wish Christ may come quickly, and you be taken up to meet him in the air.

Gratefully yours,

Mrs. M. C. MASON.

Tura, Assam, India, Aug. 31.

Well, what do you think happened? When the missionaries scattered far and wide got hold of GLEANINGS, and were touched by my (very likely) awkward attempt to spread the gospel, they took hold of it in a wonderful way, and in a little time we were not only having correspondence, but receiving orders for books and hive fixtures from all over the world. It proved to be "casting bread upon the waters;" but not a thought of self or of profit occurred to me when I did, as you might almost say, blunder into it.

Once more, my new love for humanity, especially for sinful humanity, soon led me to go into our county jail. As we had saloons then, there was a fair crowd there, and I started a Sunday-school in that jail. In a little time I had some of the boys at work in our factory. One of them, as you may recall, learned to set type for GLEANINGS, and afterward slept nights in the jewelry store, and acted as night watchman. Such reckless proceedings, together with my branching out so rapidly in the bee

business, alarmed the business men of our town. I mortgaged what little property I had, and then got into a tight place financially. The boys I took out of the jail did not all get into "the straight and narrow path" just at once. I was worried in trying to look after so many things; and before the roof was on that first brick building, the one with the text, "In God we Trust," no one among my friends and neighbors wanted to give me any financial help. Mrs. Root feared I had done wrong, not only in pushing ahead so fast, but in taking the boys out of jail and trying to make *good boys* of them. Said I, "We will kneel down, Sue, and ask the great Father to open the way out of our financial trouble if he is *pleased* with what I have undertaken in regard to the boys in prison." I had in mind the very text we are talking about—"seek ye first the kingdom of God," etc. Do you remember what happened? On the very day the money was due for the brick in the building, a check came from away off in Quebec. Another thing, it read, "Pay to the order of A. I. Root \$500 in gold and charge to the account of George O. Goodhue, Quebec."

Once more (please excuse a brief repetition) I was trying to discourage the young boys who were thinking of using tobacco from doing so. One day when there was a little gathering at a beekeeper's home down in Chatham, Medina Co., Ohio, one of the crowd used cigar smoke to quiet the bees. A beginner in bee culture who saw him do it said in substance. "I am going to buy some cigars and learn to smoke so I can handle them as that fellow does."

At once I protested, saying, "My young friend, if you will give up the intention of buying cigars, and promise me not to use tobacco in any shape or form I will make you a present of a new kind of smoker that I have just invented."

Of course that created a laugh all around. But nobody was offended, even if he were a user of tobacco, because of the way I put it. Then another boy said, "May I have a smoker too?" Then the whole crowd took it up and began to laugh because they thought they had got a joke on me. With that beautiful text in my heart, if not before my eyes, I said, "My good friends, you can each and all have a nice new smoker providing you will give me your promise and let me print it in our little bee-journal with your name attached, that, if you ever use tobacco again in any form or manner, you will pay me fifty cents—the price of the smoker."

Once more, dear friends, I had no thought

that I had unconsciously started a new scheme for advertising. Shall I be presumptuous if I tell you now that the Holy Spirit was leading me *and I did not know it?* I need not tell our older readers the outcome of the smoker pledge. I met a man away down in Florida not long ago who said he owed A. I. Root a vote of thanks for having induced him to break loose from the shackles of the tobacco habit in years past. Later on I had to modify my offer and put it something in this shape: "Any beekeeper who is a user of tobacco may have a smoker postpaid free of charge if he will give me his promise, to be printed in GLEANINGS, that he will pay me for the smoker, postage included, if he ever uses tobacco again in any shape or manner." In a little time over a thousand smokers were given away, and their names are standing now in black and white on the pages of the early volumes of GLEANINGS. One reason why the pledge *held* was because the friends and neighbors, besides his own family, saw his name in print with the pledge above it. There are but very few people who would like to be told that they have broken their pledge put down in black and white. Not only ministers of the gospel made the pledge, but quite a number of women.

After I had given away several hundred smokers in this way one of our bee friends up in Michigan claimed that my smoker was an infringement on his patent; and rather than incur litigation over the matter I decided he was perhaps right, and I told him that I would give way and not manufacture any more smokers on the principle involved. When I gave him that promise I did it without thinking very much about the smokers I was giving away. He took it for granted that I would buy of him instead of making them; but they would then cost me a dollar each. As before, Mrs. Root said, "Dear husband, have you not been hasty?"

Once more we knelt down and asked "the Lord to provide." Right away came a smoker from away off in California from J. G. Corey, of Ventura. It was made on a new principle, and the idea was so novel and unique that we had a lot of the new cold blasts finished and ready to send out the very day the sample came by mail. Let me go back a little.

My fashion of giving a smoker to beekeepers if they would give up tobacco was a sufficient novelty to get it into the daily papers; and, as in the case before mentioned, it secured for me a lot of advertising; and before the year was out over

20,000 smokers were sold, besides the one thousand or more I had given away. Do you see, my good friends, how this story corroborates the promise of that beautiful text, "and all these things shall be added unto you"?

A few days ago I was taking a little crowd of Christian friends to see the different departments of our establishment. A German boy or man, rather, was at work making smokers, and I stopped by his bench long enough to tell them the story as above; and as I concluded, a bright smile came over his face as he said something like this:

"Mr. Root, I know all about that story you have just been telling. I was the boy who made that first cold-blast smoker, when you brought me the one to look at that came by mail."

My good friend Jacob Kramer had been making those smokers, off and on, for 33 years. Shortly after that talk with me which I have mentioned, he was taken sick, and a few days ago I visited him and was told he was near death. He came to me

right from Germany, when he could speak scarcely any English. Shortly after he learned to make smokers he *also* learned to love the Lord Jesus Christ, and to put all his trust in him; and when near death he talked with me freely about the future.* I once said to my good old mother, when I first began to consider that wonderful text, "Love ye your enemies; do good to them that hate you," etc., that this text was an *unexplored region*. That was years ago; and I still think, dear friends, that the matter of returning good for evil is a comparatively unexplored region; and I am impressed, too, by the thought that our three texts in this Home paper are also, in the eyes of the world, an unexplored region. Let me say, therefore, in the language of our text. "Take no thought what ye shall eat or what ye shall drink, but seek ye first the kingdom of God and his righteousness, and all these things shall be added unto you."

* Mr. Kramer died Oct. 8, 1916.



HEALTH NOTES

SOMETHING MORE ABOUT T. B. TERRY

As I expected, ever since the time of our good friend's death on New Year's morning, 1916, now almost a year, there have been more or less inquiries in regard to Mr. Terry's life, notwithstanding the sketch I gave in our journal for March 15. We can well say of him as I said of Prof. Cook, "Blessed are the dead that die in the Lord from henceforth: Yea, saith the Spirit, that they may rest from their labors, and their works do follow them." No matter where I go, every little while somebody has something to say about Terry. Away up in the northern part of Wisconsin some years ago, in crossing a certain body of water on a steamer a stranger found out where I was from, and commenced to tell how much he owed Terry for his writings on health, and how they had brought him from near death up to strong and robust manhood.

In the *Practical Farmer* for May 15, 1916, there appeared the following sketch, together with an excellent picture as our good friend and benefactor used to look just after he had walked with us around his beautiful home and farm. May God be praised that such a man was permitted to have a fairly long life, and to spend that

life as he did, unsparingly, for the benefit of his fellow-men.

MY FATHER

By Robert S. Terry.

(EDITORIAL NOTE.—Since the sad announcement, in our issue of Jan. 15, of the death of our good friend and Associate Editor, Mr. T. B. Terry, we have received a number of letters from our subscribers, asking that we publish his biography. It has been our intention from the time of Mr. Terry's death to do this; but we were anxious to have it as complete and authentic as possible, and accordingly preferred to wait until we could obtain a biographical sketch from the pen of a member of Mr. Terry's family. It is with gratification, therefore, that we present the following sketch written by his son and helper in his work.—The Editor.)

Theodore Brainard Terry was born in Lafayette, New York, January 2, 1843. He was one of eleven children, the son of Fanny Howell and Reverend Parshall Terry. His father was a Congregational minister.

He was always of a very ingenious and inventive disposition. At the age of fourteen he took first prize at a county fair for a steam-engine which he had made, and which actually ran. He attended high school in Painesville, O., until he was seventeen, when he entered Western Reserve College in Hudson in 1860. He broke down from too much confinement and study, stayed out a year, and tried again to continue his work, but his health would not permit him to do so. While in college he, with two others, stood at the head of a strong class, taking first prize for written translation in Greek.

He was advised by doctors to get out into the open air, so he left school work for good, and went into the butter and cheese business with S. Straight & Co., in which he was able to get plenty of outdoor exercise.

March 1, 1865, he was married to Eleanor M. Tillotson, of Thompson, O. In 1869 he suffered a heavy financial loss, due to the rascality of a Chicago real-estate man, of good reputation until then. Because of this he traded his town property in on a run-down farm at Hudson, O. Here he lived for the remainder of his life.



THE LATE T. B. TERRY

His last picture and an excellent likeness

He was in debt at the beginning about \$4000, for equipment and purchase. But at the end of a few years he had cleared the debt, built some, and saved money besides. Farm work was difficult and new to him at first, being a village boy. Not being a woodsman, and not looking overhead, one day his ax caught on a limb, and, glancing, made a fearful diagonal cut across the cords and bones of one foot. The doctor stood over him all one night fighting off lockjaw, giving him, as he said afterward, "enough laudanum to kill six well men." This cut laid him up about six months. At a farmers' institute he made the remark that that cut was the best thing that ever happened to him, for it taught him to farm more with his head and less with his hands and back. He spent this time planning out systematic ways of farming, that is, ways in which he could grow the best kinds of crops. He began specializing in potatoes and strawberries. In 1882 his potato crop of 7000 bushels brought him about \$2800, and for two or three years after that the same amount annually. In 1882 he took the first prize of \$50, offered by

the Ohio State Department of Agriculture for the best detailed report of actual profitable farm management and practice. This report was published in the Annual Agricultural Report for that year.

In 1880 he was one of the first three farmers ever regularly employed by any state to lecture at county farmers' institutes, then first established in Ohio, and proving so successful that they were soon adopted in all other states. The other two lecturers were John Gould, of Aurora, Ohio, and Waldo F. Brown, of Oxford, Ohio. Later on he lectured in many states.

About this time he and his great friend A. I. Root, of Medina, wrote three books, "The A B C of Strawberry Culture," "The A B C of Potato Culture," and "The Winter Care of Horses and Cattle." He wrote "Our Farming" in 1892, this being the story of how he made his run-down farm produce both profit and pleasure, with the help of his wife and children.

About eighteen years ago he developed certain kidney troubles with a tendency to Bright's disease. The doctors told him plainly that he probably had not more than a year or two to live. He then began a careful study and care of himself, as he resolved that he would get well. He began taking the proper foods and exercise, taking cold baths, ventilating his house more healthfully, etc.—in short, doing everything in his power to get well; and he succeeded. He gave up his institute work at this time, but continued to write for *The Practical Farmer*. A short time before his illness he was offered the position of professor of agriculture at Ohio State University, but he preferred to remain on the farm and continue his writing.

After his breakdown he turned to the study of hygiene and health, in the same thorough manner in which he did everything, resolving "to do everything the best he could do or learn how to do." He knew that "where there's a will there's a way," and never recognized the word "fail." He spent the remaining years of his life improving his own health and helping every one else to improve theirs. He wrote "Health Hints" for *The Practical Farmer*, and also the book, "How to Keep Well and Live Long," telling his own experiences and difficulties and how he remedied his weakened condition. He lectured very little after this except on the subject of health.

Until about two months before his death he felt pretty well. Then we began to notice that he did not look so well. We feel that he probably would have lived many years yet, as he had expected, but for the fact that he did a terribly hard and trying job of painting on the flat roof of a large covered cowyard. He was forced to take an unnatural position, holding the brush out in front of him at arm's length. The reaching, twisting, and continuance of this threw a strain on his back and bladder that caused an inflammation. They were susceptible on account of having been weakened many years before, and were unable to resist the terrible inflammation resulting from overstrain. His habits of life would have preserved his health had he not mistakenly severely overtaxed his endurance. He realized for about two weeks before his death that he could not recover, and dictated the disposition of all his affairs.

He passed away New Year's morning, 1916, just the day before he would have been 73 years of age. Left to mourn the loss of a loving and wise counselor are his wife, a daughter, Mrs. Grace T. Ritchie, of Columbus, O., and myself. There are five grandchildren, Robert and Theodore Ritchie, Carroll and Lynne Thompson, and Eleanor L. Terry. Two children preceded him to the great beyond, a son dying in infancy, and a daughter, Mrs. Lillian M. Thompson, who died April 28, 1898.

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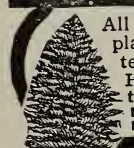
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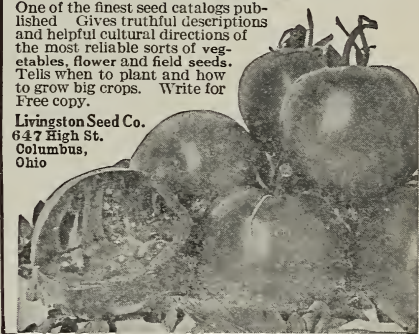
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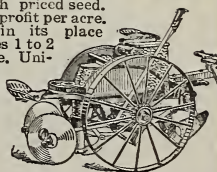
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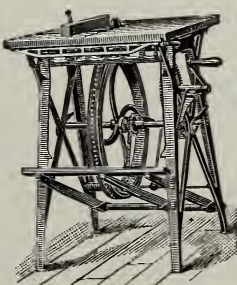
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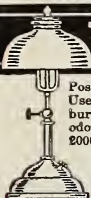
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The Domestic Beekeeper

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We will also use many more pictures in the *Domestic Beekeeper* than heretofore. If you have good photos, or can get them, showing some valuable feature pertaining to our pursuit, send them on for we can use them and are willing to pay for them.

We have already made arrangements with a few noted writers for the *Domestic Beekeeper* for 1917. Such writers as J. E. Crane, Ira D. Bartlett, Floyd Markham, E. S. Miller as regular correspondents and we are making arrangements with other noted writers for 1917, so no one interested in modern beekeeping can afford to be without *The Domestic Beekeeper* during 1917. Address with your dollar to

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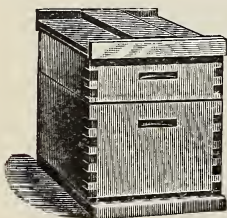


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Eastern Beekeepers

Write us when in need of bee hives, sections, foundation or anything in the supply line. Discount on early orders.

If you are planning on keeping more bees, we can furnish you with full colonies, nucleus, or bees by the pound at reasonable prices, as we have 700 colonies in our several yards.

One-pound flint-glass honey-jars, burnished top, \$5.00 a gross. Catalog mailed upon request.

A bargain: 3000 sections 3 5/8 x 5 x 1 1/2 slightly soiled at \$2.50 per 1000.

I. J. STRINGHAM

105 Park Place, New York City

Apiary: Glen Cove, L. I.

STRAWBERRY (OF ALL KINDS)

Fine stock of the wonderful Everbearing plants at right prices. Small fruit plants for farm and garden. Write for catalog. Return this ad. and several fruit-growers names for one-half dozen Everbearing plants free.

PLANTS

BRIDGMAN NURSERY CO., BOX 44, BRIDGMAN, MICH.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and should not exceed five lines; and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold.

D. Steengrafe, 81 New St., New York.

Beeswax bought and sold. Strohmeier & Arpe Co., 139 Franklin St., New York.

FOR SALE.—White clover and buckwheat extracted honey. Price on application.

I. J. Stringham, 105 Park Place, New York.

FOR SALE.—Pure honey and beeswax—Porto Rico, Cuban, etc.

D. Steengrafe, 81 New St., New York.

FOR SALE.—Choice table honey, thoroly liquefied, in new 60-lb. cans at 11 cts.

Van Wyngarden Bros., Hebron, Ind.

FOR SALE.—New comb, dead ripe, extracted white-clover honey in new 60-lb. cans, 1200 lbs.

C. A. Neal, Jonesboro, Ind.

FOR SALE.—Extracted honey, white clover, buckwheat, and buckwheat blend; 120 lbs. to case; new tins.

J. G. Burtis, Marietta, N. Y.

FOR SALE.—No. 1 white comb, \$3.50 per case; No. 2, \$3.00; No. 1, fall comb, \$3.00; No. 2, \$2.50; 24 sections to case.

H. G. Quirin, Bellevue, O.

FOR SALE.—A limited quantity of choice stock buckwheat and pure clover honey in 60-lb. cans and 5-lb. pails.

C. J. Baldrige, Homestead Farm, Kendaia, N. Y.

HONEY AND WAX WANTED

WANTED.—Clover extracted honey.

Deroy Taylor Co., Newark, New York.

WANTED.—Extracted clover and light-amber honey in any quantity. Send sample and lowest price.

C. O. Bergstrand, Balsam Lake, Wis.

BEEWAX WANTED.—For manufacture into Weed Process Foundation on shares.

Superior Honey Co., Ogden, Utah.

WANTED.—Extracted clover honey in any quantity; send sample and lowest cash price.

E. B. Rosa, Monroe, Wis.

WANTED.—White clover and light-amber extracted honey. Will buy in lots of 1000 lbs. to a carload. Send sample and lowest price.

M. E. Eggers, Eau Claire, Wis.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up, and quote lowest cash price delivered in Preston.

M. V. Facey, Preston, Minn.

FOR SALE

Get our new Rubber Stamp and Label Catalog.
Acme Printing Co., Medina, Ohio.

HONEY LABELS.—Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Ct.

SEND TODAY for sample of latest Honey Labels. Liberty Pub. Co., Sta. D, box 4-E, Cleveland, Ohio.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—Circular-saw mandrels, and emery-wheel stands. Charles A. Henry, Eden, N. Y.

Comb foundation cheap, factory to beekeeper direct. J. J. Angus, Grand Haven, Mich.

Free for the asking—beautiful scriptural wall motto—no advertisement.

W. L. Stewart, Glenfield, Pa.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap.

White Mfg. Co., Greenville, Tex.

FOR SALE.—4 x 5 Seneca camera, like new, for a hive with bees.

F. Konszczynski, 284 Elm St., Wyandotte, Mich.

FOR SALE.—2 sows and 3 boars 2 months old, choice Duroc-Jersey pigs, \$10.00 each, f. o. b. here. Papers furnished. Marshal Rankin, Brady, Tex.

Will sell nearly new 20B extractor, \$9.00; new, \$10 apple-parer, \$5.00; will buy four-frame extractor, 10-frame hives, comb-pockets for extractor.

C. O. Proper, Diamond, Pa.

Good second-hand 60-lb. cans, 2 cans to the case, 30 cts. per case, in lots of 10 cases or less. In lots of 25 cases or more, 25 cts. per case. These prices are f. o. b. Cincinnati. C. H. W. Weber & Co., 2146-2148 Central Ave., Cincinnati, O.

THE ROOT CANADIAN HOUSE.—54-56 Wolsley St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANNINGS and all kinds of bee literature. Get the best. Catalog free.

PATENTS

Patents secured or all fees returned. We help sell patents. Patents advertised free. Send data for actual free search. Books free. Credit Given.

E. E. Vrooman & Co., 834 F, Wash., D. C.

POULTRY

S. C. Brown Leghorns; stock, eggs, baby chicks. Circular. H. M. Moyer, Boyertown, Pa.

S. C. R. I. Reds, direct descendants of my winners at Omaha, Sioux City, and Lincoln. Only selected stock for sale. Otto Timm, Rt. 1, Bennington, Neb.

POULTRY PAPER, 44-124 page periodical, up to date, tells all you want to know about care and management of poultry, for pleasure or profit; four months for 10 cents. Poultry Advocate, Dept. 56, Syracuse, N. Y.

GOATS

MILCH GOATS.—"Profit and Pleasure in Goat-Keeping," pronounced by experts the best goat book, regardless of price, profusely illustrated; by mail, 35 cents. Fred C. Lounsbury, Plainfield, N. J.

WANTS AND EXCHANGES

WANTED.—Peterson capping-melter.
Van Wyngarden Bros., Hebron, Indiana.

Wax and old combs wanted for cash or to make up on shares, beekeeper to factory direct.
J. J. Angus, Grand Haven, Mich.

WANTED.—For spring delivery, 600 colonies of pure Italian bees. Write Lewis H. Furgason, Box 108, Windham, N. Y.

FOR SALE OR TRADE, hotel in live Minnesota town; will exchange for land or bees, or both.
Romen Grebin, Preston, Minn.

WANTED.—Man to wear fine suit, act as agent. Big pay, easy work.
Banner Tailoring Co., Dept. 502, Chicago.

WANTED.—To work an apiary in a good location on shares, with preference of buying. Must be free from disease.
Harvey F. York, Avant, Okla.

WANTED.—Every beekeeper to plant hardy northern nut-trees, budded and grafted; pecans, English walnuts, and chestnut; immense profits. Catalog free.
R. L. McCoy, Lake, Ind.

WANTED.—To sell an interest in the bee business to some honest ambitious young man who wishes to go into the business in a large way in as good a locality as there is in New York State. Do not write unless you mean business.
The M. C. Silsbee Co., Rt. 3, Cohocton, N. Y.

WANTED.—Back numbers of GLEANINGS, one volume each for the years 1875, '77, '78, '79, '80, '81, '82, '83. If you have all or some of these, and want to sell them, write, stating condition and price, postpaid.

J. Allen Fletcher, Rt. 1, New Burlington, Ohio.

WANTED.—To furnish every beekeeper within 500 miles of Boise, Idaho, with the best and cheapest bee supplies on the market, *quality considered*. Send me your order or a list of your requirements for 1917. Our catalog and price list will be mailed to you free. Order early and get the discounts.
C. E. Shriver, Boise, Idaho.

WANTED.—Particulars of good unoccupied locations for production of white honey, especially in Michigan, Wisconsin, Montana, Wyoming, Idaho, Colorado, Utah, or other good states; also will furnish outfits to one or more worthy qualified young beekeepers in some of these states who will run bees on shares. Am also in the market for bees in above localities. Box 4, Gleanings in Bee Culture.

REAL ESTATE

FOR SALE.—My home in Redlands, Cal. Will include bees if desired.
P. C. Chadwick, Redlands, Cal.

FOR SALE.—40 acres, 8 of upland, 12 of huckleberries, 20 of good onion and celery land, uncleared. Write for particulars.
M. W. Dunham, Rt. 3, Bellevue, Mich.

FOR SALE.—My home in Florida, nearly 2 acres land, good location for poultry and bees; 36 bearing citrus trees. If you mean business, write for views and particulars. J. B. Herr, Melbourne, Fla.

TWENTY-ACRE FARM.—Good creek bottom; two miles to good market town of 40,000; suitable for bees and truck; large amount of alfalfa raised near; five miles from Purdue University. For particulars address John W. Parker, Rt. L, Lafayette, Ind.

A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable

neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free.
C. L. Seagraves, Industrial Commissioner A. T. & S. F. R'y, 1934 R'y Exchange, Chicago.

THE SOUTH FOR FARM PRODUCTS.—Southern lands are low in price—give large yields of corn and other grains, grasses, and forage crops; all kinds truck; grow fine fruit. You can get good lands in healthful location, where climate is pleasant and works for you, where two and three crops grow annually, for \$15 to \$50 an acre, according to improvements. Great opportunity for general farmers, stock-raisers, dairymen, poultry-raisers, fruit and truck growers. Information on request. M. V. Richards, Ind. and Agr. Commissioner, Room 27, Southern Railway, Washington, D. C.

BEEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 De Wolf St., Vincennes, Ind.

250 colonies of bees for sale.
G. F. Wilson, 829 Bross St., Longmont, Colo.

Well-bred bees and queens. Hives and supplies.
J. H. M. Cook, 84 Cortlandt St., New York.

Nutmeg Italian queens and Root's beekeepers' supplies, Root's prices.

A. W. Yates, 3 Chapman St., Hartford, Conn.

Fine Italian queens and bees. Send for our 1917 calendar, free.

A. E. Crandall & Son, Berlin, Conn.

253 colonies of bees with supplies in best location in U. S. for honey, bees, or queens. \$1200. A bargain.
N. Gute, 2363 Fulton St., Toledo, O.

My choice northern-bred Italian queens are hardy, and will please you. Orders booked now for spring delivery. Free circular. F. L. Barber, Lowville, N. Y.

BUSINESS FIRST QUEENS.—Tested queens ready now. Send for price list containing my \$10 free offer.
M. F. Perry, Bradentown, Fla.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1; 6 for \$5.
Wm. S. Barnett, Barnetts, Va.

FOR SALE.—80 colonies of fine bees at Tularosa, N. M.; good location; good place to live, because owner deceased. Address N. B. DeWitt, care of E. P. & S. W. Ry., Douglas, Ariz.

My 3-banded Italian queens will be ready to ship April 1. Write for prices of bees and queens by the pound. Safe arrival and satisfaction guaranteed.
J. A. Jones, Greenville, Ala.

FOR SALE.—Entire apiary of 30 colonies in 10-frame Dovetailed hives; supers, sections, hives, tools, etc. Write me.
J. Ward Somers, Brookville, O.

FOR SALE.—1000 lbs. bees in 2-lb. packages at \$1.00 per lb. Untested Italian queens, 70 cts. extra, to be shipped April 1 to 20. All orders must be in by April 1.
T. W. Burleson, Waxahachie, Texas.

My bright Italian queens will be ready to ship April 1 at 75 cts. each; virgin queens, 30 cts. each. Send for price list of queens, bees by the pound; safe arrival and satisfaction guaranteed.

W. W. Talley, Rt. 4, Greenville, Ala.

FOR SALE.—Italian bees, 1 lb. with queen, \$2.25; one-frame with queen, \$2.00. Queens, 75 cts. each. Safe delivery guaranteed; 30-page catalog with beginners' outfit for stamp. The Deroy Taylor Co., Newark, N. Y. (formerly Lyons).

FOR SALE.—250 colonies of bees in the Toyah Valley; 8-frame extractor and engine. I want to sell at once. B. B. Fouch, Saragosa, Reeves Co., Tex.

My bright Italian queens will be ready to ship April 1, at 60 cts. each; virgin queens, 30 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00. J. B. Brockwell, Barnetts, Va.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00; 6, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00. C. W. Phelps & Sons, Wilcox St., Binghamton, N. Y.

Queens for requeening. Best on market. One untested, \$1.50; 12, \$12.00; one tested, \$2.00; 12, \$18.00; one select tested, \$3.00; 12, \$24.00. Special low price on 50 or more. Write. Safe delivery and satisfaction guaranteed. The J. E. Marchant Bee and Honey Co., Canton, Ohio.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money returned by first mail. 1000 nuclei in use. Tested, in June, \$1.75; untested, \$1.00; in July, \$1.50 and 75 cts. Postal brings circular. John M. Davis, Spring Hill, Tenn.

QUEENS, Doolittle and Moore strain, also Golden. One select unt., \$1.00; 6, \$4.25; 12, \$8.00; tested, \$1.25. Best breeder, \$5.00.

Bees by the pound a specialty. One 1-lb. package, \$1.25; one 2-lb., \$2.25; large lots less; also nuclei and colonies. Ready March 15. Booking orders now. Circular free.

J. E. Wing, 155 Schiele Ave., San Jose, Cal.

HELP WANTED

Young man, who wants to learn the business of working with bees and poultry. Little experience necessary. E. L. Lane, Trumansburg, N. Y.

WANTED.—A man February 1 to help handle 800 colonies comb honey. Can give good experience and fair wages. G. C. Matthews, Hansen, Idaho.

WANTED.—Experienced beeman familiar with Rocky Mountain conditions to handle bees on shares. Can offer good proposition. Write with details of experience, etc. A. H. Dunn, Fort Collins, Colo.

WANTED.—A queen-breeder to commence work April 1, 1917. Must have had some experience and be able to give good moral references.

M. C. Berry & Co., Hayneville, Ala.

WANTED.—Young man to take charge of small apiary and work at fruit and poultry. Must be good character—no tobacco nor rum. Good chance for advancement for right man.

Fred'k M. Peasley, Cheshire, Ct.

WANTED.—Experienced beemen for 1917 season, between the ages of 21 and 45; age and experience given in first letter. Any one addicted to the use of intoxicating beverages need not apply.

J. W. George Bee Co., Holtville, Cal.

WANTED.—Experienced beeman who can handle outyard for extracted honey, and knows the bee business thoroughly. Must not drink, use tobacco, nor gamble. I work my own hives. I want a man who can do this. White City Apiaries, J. W. Potts, Prop., Gunnison, Miss.

SITUATIONS WANTED

WANTED.—Position in an apiary in the South, Southwest, or West.

Fred E. Osborne, Ahearn, Florida.

SITUATION WANTED.—By experienced beekeeper in Washington, eastern Oregon, or southern Idaho. A. Wendte, 211 N. 9th St., Yakima, Wash.

WANTED.—Experienced beekeeper, single man, age 30, wants position in a large apiary. State wages and full particulars when writing.

M. Miklovich, Box 54, Janesville, Minn.

POSITION WANTED with an old beekeeper. I have had quite a little bee experience; am an American, age 33, of good habits; want an all-summer's job; am a farmer by trade.

Peter Young, Kellogg, Minn.

CONVENTION NOTICES

The meeting of the Ohio Beekeepers' Association will be held in Columbus, Feb. 1 and 2, 1917, during farmers' week at College of Agriculture, Ohio State University, Columbus, Ohio.

Dr. Ernest Kohn, Grover Hill, O., is the secretary, to whom all communications should be addressed. Delphos, Ohio, Dec. 21.

Fred Leininger.

The Montana State Beekeepers' Association will meet this year at Bozeman, Mont., in conjunction with Farmers' Week at the State College, Jan. 21 to 28, 1917.

S. F. Lawrence, Sec. and Treas.

Hardin, Mont., Dec. 15.

The annual meeting of the Ontario Co. B. K. Society will be held on Tuesday, Jan. 9, 1917, in the Canandaigua, N. Y., Courthouse.

Naples, N. Y., Dec. 20.

F. Greiner, Sec.

The annual meeting of the New Jersey Beekeepers' Association will be held at the Entomology Building, Bleeker Place, New Brunswick, N. J., on Tuesday and Wednesday, Jan. 9 and 10, 1917.

E. G. Carr, Sec'y-Treas.

New Egypt, N. J., Dec. 24.

A meeting of the beekeepers of North Carolina will be held in Board of Trade Hall, Board of Trade Building, Winston-Salem, on Thursday afternoon and night, January 11, 1917.

This meeting will be in co-operation with the extension work lately started in the state, and every beekeeper in the state should make his best endeavor to be present, and help boost the good work along. It is expected that a state organization will be effected at that time.

Dr. E. F. Phillips will give an illustrated lecture, and Mr. E. R. Root is expected to fill a large place on the program.

Several live papers will be presented by local beekeepers. The North Carolina live-stock show will be on in Winston-Salem at that time and many beekeepers will have a double reason for attending.

All beekeepers whose names are listed in the department's records at Raleigh will receive a circular of the meeting. If your name is not now on the Department's mailing list, please write at once to one of the following, giving your name and address, number of colonies kept, and kind of hives.

Franklin Sherman, Jr., Entomologist.

George H. Rea, Specialist in Beekeeping.

PROGRAM OF THE NATIONAL BEEKEEPERS' ASSOCIATION, FEBRUARY 6, 7, 8, 1917.

Meeting-place, State Capitol; headquarters, Park Hotel.

TUESDAY, 10 A. M.

Address of welcome, N. E. France; president's address; appointment of committees; recess.

1:30 P. M. to 5:30.

Topics and speakers are given below; 6:00 supper; 7:30 appropriate entertainment.

WEDNESDAY

9:00 A. M., topics and speakers as below; 1:30 P. M., business session in committee rooms; 1:30 P. M., regular program as below; 7:00 P. M., banquet.

THURSDAY

9:00 A. M., secretary's report; treasurer's report; report of committees; election of officers; appointment of standing committees.

SPEAKERS

Dr. C. C. Miller, Marengo, Ill.; Dr. E. F. Phillips, Washington, D. C.; C. P. Dadant, E. R. Root, Medina, Ohio; Morley Pettit, Guelph, Ontario; Dr. S. A. Jones, Washington, D. C.; G. W. Williams, Redkey, Ind.; Dr. L. C. Leonard, Minneapolis, Minn.; Dr. W. M. Copenshauer, Helena, Mont.; Frank Pellett, Atlantic, Ia.; Prof. Eric Millen, East Lansing, Mich.; E. D. Townsend, North Star, Mich.; Wesley Foster, Boulder, Colo.; E. S. Miller, Valparaiso, Ind.; Hanline B. Miller, Marshalltown, Ia.; Louis H. Scholl, New Braunfels, Texas; J. D. Bixby, Covina, Cal.; E. J. Baxter, Nauvoo, Ill., and others.

TOPICS

State and government aid for beekeeping industry; Educational, research, and extension work; Production and overproduction of honey; Comb and extracted honey; National bee census; State fairs and exhibits; Honey and wax in commerce; Competitors and enemies of honey industry; Standards of grading, packing, shipping, and others; Advertising and increasing consumption of honey; Containers; Freight and express, imports and exports; Honey statistics, quotations, distribution of reports; Supply and demand, the "bear" and "bull" in the honey market; Efficient protective system for American beekeepers; Necessity of a national central office; Plans and policies to make the National a powerful agency for success.

THE UNITED HONEY PRODUCERS; WHAT IT IS, AND WHAT IT IS DOING.

The U. H. P. is an organization of beekeepers to encourage the consumption of honey and to get more money for it when sold.

It has room for two classes of beekeepers—the local producer who has a market for all his own honey, and possibly more, and the remote producer who wants some help in selling his production.

One local producer is needed in every locality to supply the local demand with his own honey as far as it will go, and then with some bought from members who are not so fortunate as to have a local market. It is estimated that 30 times the quantity can be sold by a canvasser that a grocer will sell. Many of our members are not doing any canvassing, but are doing an increasing business by placing a big sign on the road to attract the attention of tourists. Local beekeepers also can control the grocery trade.

The remote producer is needed to furnish the surplus for these local merchants at a better price than the jobber will pay. This will help raise the price of all honey.

These beekeepers are now being organized into state bodies, and these in turn into a national one. Three states are nearly organized now, and others are well along.

The dues will be expended for the purpose of extending the use of honey, except the fixed percentage that is required for postage and office work. It is using it at the present time to furnish bulletins to the schools to teach the food value of honey to the rising generation. There are now 40,000 pupils receiving this instruction, and arrangements are being perfected to increase the number to half a million yet this winter.

Due provisions will be made to safeguard the interests of the members in their own local market. A trade mark has been "invented" that will be a powerful agent in selling the honey of the members. It is a closely guarded secret yet, and will be until it can be protected, and safeguards provided to guard against abuse.

We need one committeeman in each county in the United States, and are opening the door for volunteers. If you wish the position in your locality, send in your application; and if it has not already been provided for it will be considered. This is a good opportunity for young men who intend to make beekeeping their life-work. With a string of

these beekeepers in every locality in the United States, and all pulling together, the price of honey will "bounce" up to the place it belongs, and our members will be in position to profit by the advance. Geo. W. Williams, Secretary, Redkey, Ind.

TRADE NOTES

SPECIAL-SIZE SECTIONS.

In going over our stock we find 18,500 two-beeway sections, B grade, in the irregular size of $4\frac{1}{4} \times 1\frac{1}{2}$. To close these out we will accept \$3 per 1000 by the single thousand, or \$2.75 per 1000 for the lot.

WARNING AGAINST SUBSCRIPTION FRAUDS.

We again warn our readers as to paying unknown solicitors for subscriptions. It is seldom that fraudulent deals are worked among readers of a bee journal. However, very recently in Colorado a man has been soliciting membership in a sort of agricultural club and taking subscriptions also for "Bee Culture," all for \$1.00, giving a worthless receipt for the money collected. Never pay out money to an unknown solicitor. Trust only the most reputable subscription agencies or write direct to the publication office.

PORTER BEE-ESCAPE

Saves Honey, Time, Money



For Sale by All Dealers

THE A. I. ROOT CO., Medina, Ohio
General Agents for the United States

R. & E. C. PORTER, Manufacturers
Lewistown, Ills., U. S. A.

Raw Furs My graders' guide and price list are FREE.

Furs held separate on request. Rug and robe making a specialty. No commission or express to pay when you ship to

GEO. E. KRAMER, Valencia, Pa.

Mention "Gleanings"

When Ordering Supplies

remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad—Maine Central and Grand Trunk. Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager

BEE SUPPLIES Send your name for new catalog.
Dept. T. CLEMONS BEE SUPPLY CO.,
128 Grand Avenue, Kansas City, Mo.

PATENTS Practice in Patent Office and Courts
Patent Counsel of The A. I. Root Co.
Chas. J. Williamson, McLachlan Building
WASHINGTON, D. C.